The Bristol Medico-Chirurgical Journal

" Scire est nescire, nisi id me Scire alius sciret."

AUTUMN, 1932.

MENTAL DEFICIENCY:

AN ANALYSIS OF THE MENTAL, PHYSICAL AND MEDICAL CHARACTERISTICS OF A GROUP OF ONE HUNDRED AND SIXTY-TWO ADULT FEEBLE-MINDED WOMEN.

BY

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THE medical staff of this Institution has recently conducted a co-operative examination of a group of 162 adult feeble-minded female inmates of the Colony. The investigation was not undertaken to further any preconceived opinions or theories as to the origin, causation and mental manifestations of mental deficiency, but simply to ascertain, first the facts, and second—if and where possible—the presence of any causative factor for the mental condition removable by medical care and treatment. For the

first objective it was necessary to obtain a sufficiently large and homogeneous group to justify, statistically, any conclusions to be drawn for present or future comparative purposes. It was, therefore, proposed to examine 200 females of over 21 years of age and with a mental ratio of not less than seven years. But notwithstanding this relatively low mental standard and the large numbers of inmates of the Institution, it was not found possible to obtain more than 162 who satisfied the dual conditions, and of these some died, some were transferred to other institutions, and others were discharged on licence before the whole investigation could be completed; consequently the actual numbers vary slightly in some of the observations to be recorded.

The several lines of the investigation and those primarily responsible for their conduct were as follows:—

Physical and mental characteristics: the Director of Medical Services and the Psychological Staff.

Medical examination by Dr. J. A. Nixon, Professor of Medicine in the University of Bristol.

Neurological examination by Dr. R. G. Gordon.

Examination of the eye by Mr. A. E. Iles, F.R.C.S.

Examination of ear, nose and throat by Mr. Angell James, F.R.C.S.

X-ray examination of the skull by Dr. T. B. Wansbrough.

Some psychological experiments dealing with language ability, appreciation of spatial relationships and types of imagery by Dr. R. M. Norman in conjunction with Dr. R. G. Gordon.

Observations on the general behaviour and social reactions by the Matrons in charge of the cases.

1. *Physical and Mental Characteristics.*

The measurements and mental tests recorded fall into four chief groups :—

Head measurement and the calculation therefrom of cubic capacity of brain.

Physical measurements of standing and sitting stature and weight.

Neuro-muscular measurements of right and left grip and vital capacity.

Binet and Porteus tests.

As a full account of the objectives of the above, as well as of the mode of recording them has been published elsewhere,[1] the information need not be repeated. It is, however, of some interest to note that closely similar methods have been utilized by Doll in the United States,[2] by Dr. H. L. Gordon in Kenya Colony,[3] by Dr. Vint in Kenya Colony,[9] and by myself for a large group of Australian hospital cases.[4] The results for these Stoke Park defectives, which were worked out statistically and mathematically under my supervision by my assistants, Miss West and Miss Bergman, are as follows :—

	N.	True mean.	Standard deviation.	Nearest normal age.
Head length ..	162	177·35 ± 0·35	6·71 ± 0·25	= 10·0 years.
Head breadth ..	162	140·32 ± 0·29	5·58 ± 0·20	= 10·0 years.
Head height ..	162	121·85 ± 0·34	6·37 ± 0·23	= 4·2 years.
Cubic capacity ..	162	1215·33 ± 4·90	92·43 ± 3·46	= 8·9 years.
Standing stature	162	1537·88 ± 3·44	64·89 ± 2·43	= 14·7 years.
Sitting stature ..	162	830·94 ± 1·87	35·42 ± 1·32	= 15·0 years.
Weights	162	48·91 ± 0·37	7·09 ± 0·26	= 16 years.
Right grip ..	162	28·60 ± 0·29	5·56 ± 0·20	= 16·6 years.
Left grip	159	27·08 ± 0·29	5·47 ± 0·21	= 17·0 years.
Vital capacity ..	162	2282·41 ± 29·9	563·9 ± 21·1	= 16·3 years.
Binet I.Q. ..	162	55·66 ± 0·53	10·09 ± 0·37	= 9·0 years.
Porteus I.Q. ..	162	58·09 ± 1·11	21·01 ± 0·78	= 9·4 years.

True mean of the chronological age was 23·11 years.

Compared with normal children this group of adult defectives, with a true mean of 23·11 years, stands as follows :—

Size of head and brain equals that of a normal girl of 8 years 9 months.

The Binet mental ratio is that of a normal girl of 9 years.

The Porteus mental ratio is that of a normal girl of 9 years 4 months.

Physical development is that of a normal girl of 15 years 2 months.

Neuro-muscular development equals that of a normal girl of 16 years 7 months.

Assuming 18 years of age to express adult development — though such an assumption flatters the defectives—the years of their physical and mental retardation are as follows :—

For brain size, 9 years 3 months of retardation.

For mental ratio, 8 years 10 months of retardation ; but if 16 years be taken to represent normality, then only 6 years 10 months of retardation.

For physical development, 2 years 10 months of retardation.

For neuro-muscular development, 1 year 5 months of retardation.

Differently expressed, these defectives are underdeveloped to greater or less degree on every count and measurement.

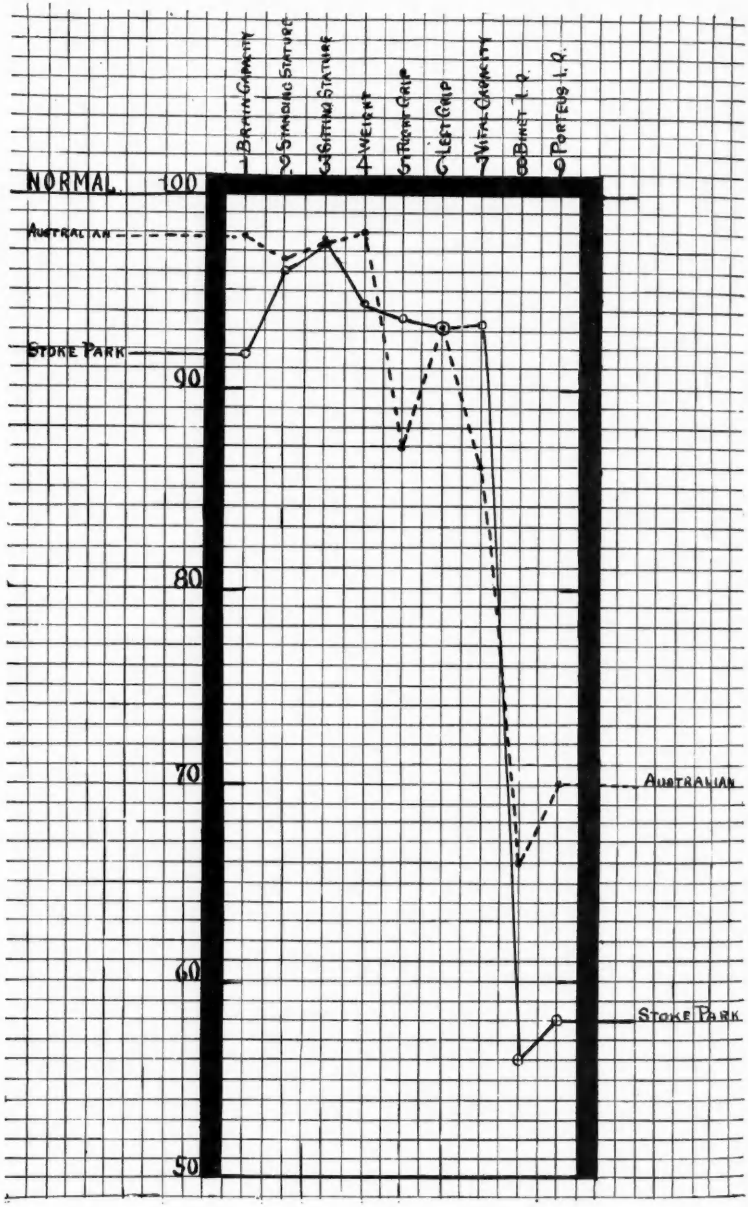
As regards size of head, 83·4 per cent. are so small-headed as to be definitely microcephalic, 0·5 per cent. are macrocephalic, and the remainder fall within the range of variability of normality. Of the microcephalic, 62 cases, or 38 per cent., were indeed so small-headed as to fall far below any previously

recorded figure of brain capacity of normals. As four out of every five are thus definitely small-headed, it is not an unreasonable deduction to regard head measurement, recorded in accordance with the recommendations of the British Association for the Advancement of Science,[5] as a distinct advance in the scientific diagnosis of mental deficiency.

Further, if this tendency of the mentally defective to be microcephalic be read into, and in conjunction with, modern knowledge[6, 7] of cortical lamination and its significance it is again both reasonable and logical to assume the microcephaly of mental deficiency to be an index of a deficiency of cortical neurons, especially of the pyramidal-celled supra-granular cortex.

That this inference is correct, at least in the present series, is corroborated by the poverty of the Binet and Porteus mental ratios, which give a combined age of 9 years 2 months as compared with the 8 years 9 months for brain capacity. All three lines of approach thus agree in suggesting a seriously under-developed brain as the cause of the mental deficiency rather than any mere lack of educational opportunity.

These general comparisons of the feeble-minded with normals, as also of the present group with an Australian series,[4] are graphically set out in the accompanying graph. The tendency for defectives to be retarded, both physically and mentally, is as obvious in the Australian group as in the English, and thus the one series confirms and corroborates the other. Certain differences will, however, be noted. The former gives readings superior to the latter for brain capacity, physical development and mental ratios, and the explanation is to be sought in the fact that the English series is definitely feeble-minded,


1 BRAIN GRADIENT
2 STANDING STATURE
3 SITTING STATURE
4 WEIGHT
5 RIGHT GRIP
6 LEFT GRIP
7 VITAL CAPACITY
8 BIMET. I. P.
9 PORTEUS I. Q.
NORMAL 100
AUSTRALIAN
STOKE PARK
90
80
70
60
50
AUSTRALIAN
STOKE PARK

whereas the Australian group comprised patients of the Melbourne Children's Hospital sent down for examination and report by the Consultant Medical Staff to the Psychological Clinic then under my care. It was thus a mixed group of normals and defectives. On the other hand, the higher reading for the vital capacity of the English defectives is probably due to factors of age—adults in the one case and children in the other. Lastly, the Australian cases were of school age, and the English were beyond it. It is, however, of considerable interest to note that the higher mental ratios of the Australian group correlate with a better brain capacity, as the following figures, where normality is represented by 100, show :—

Normal.	*English. defectives.*	*Australian mixed group.*
Brain capacity 100	91·8	97·8
Binet I.Q. 100	56·0	66·0
Porteus I.Q. 100	58·0	70·0

Binet Mental Ratios. — In view of the poor intelligence quotients recorded by this Stoke Park group of adult defectives with a true mean of only $55 \cdot 66 \pm 0 \cdot 53$, it was deemed desirable to examine rather closely their performances with these tests. The Leland-Stanford revision comprises some eighty odd tests spread over, and allocated to, the years of life from the third to superior adult levels, and it was hoped that an analysis of the results might reveal the particular mental qualities lacking in these defectives, or possibly any special abilities they might possess. The main results of this analysis were as follows :—

Fourth year tests.—Four of our adult defectives had to be taken right back to the four-year-old level, and even then three failed to repeat four digits.

Fifth year tests.—These tests were attempted by 13 defectives, two of whom were unable to state their own age, and 23 per cent. were unable to perform three simple commissions.

Sixth year tests.—Attempted by 38 defectives, of whom 23 per cent. could not distinguish between right and left, and 42 per cent. failed to repeat simple syllables.

Seventh year tests.—Attempted by 89 defectives, 45 per cent. of whom were unable to repeat five figures and 39 per cent. failed to copy a diamond.

Eighth year tests.—Attempted by 135 defectives, of whom 34 per cent. were unable to count backwards from twenty, 39 per cent. could not comprehend simple problems of behaviour, and 35 per cent. were unable to give similarities between common, everyday objects.

Ninth year tests.—Attempted by 145 defectives, of whom, significantly enough, 65 per cent. failed to arrange five weights in sequence, thus suggesting a defective stereognostic sense, 54 per cent. were unable to give the correct change for simple money sums, 61 per cent. failed to repeat four figures backwards, and 59 per cent. were unable to find rhymes for simple words like day, mill and spring.

Tenth and upper year tests.—As all these, even where attempted, simply show a continuous series of failures it is not necessary to adduce further results.

Although the foregoing indicate only the more gross failures, it seems evident therefrom that the mental disability of these defectives is social rather than educational. When a group of adult young women record 30 per cent. to 50 per cent. failures at the performance of elementary commissions capable of being undertaken by a normal school child, are unable to comprehend the simplest problems of behaviour, cannot give the correct change for the simple monetary problems of everyday life, and display no single sign of ability at anything at all, it seems impossible to escape the logical deduction that they are socially defective, and that no amount of education of the ordinary scholastic kind can, or ever could have,

overcome the natural and inherent defects of an immature and under-developed brain such as all the results go to prove these defectives possessed. The public misfortune appears to be that this social and cerebral disability is not appreciated soon enough, and hence much time and even more money are wasted in attempting, educationally, to "make silk purses out of sows' ears." Defectives of this kind can, therefore, only find a place in the social life of any community, institutional or otherwise, as "hewers of wood and drawers of water," and in this capacity some of them might even find their level of social efficiency.

Social Reactions and General Behaviour. — The observations of the Matrons in charge on the social reactions and general behaviour of their charges are best introduced here, as they will afford a personal corroboration or otherwise of the results already adduced. From their daily contact with the inmates the Matrons are obviously in an exceptional position to furnish such information. On the other hand, it is to be remembered that the reactions of a segregated defective, as regards personal honesty and sexual morality, necessarily differ from those at large in the community. The opportunities for the former are disciplined and few in number. Those for the latter are neither one nor the other.

The number of defectives to whom the foregoing apply were, in the aggregate, 158. Of these 90 per cent. are reported to be unstable in conduct and behaviour; 38 per cent. are quarrelsome, disobedient and devoid of all sense of discipline; 15 per cent. are dishonest, immodest and lacking in affection. In addition to these leading characteristics many other social peculiarities were mentioned by the officers in

charge. Amongst these are "viciously immoral," "immoral tendencies," "childish," "uncontrolled emotional reactions, always weeping or always crying," "bad language, violent and destructive," "resents correction and strikes officers," "silly and moody," and so on through the whole range of those human aberrations of social behaviour, which so clearly reveal man's kinship to the animal kingdom.

That all these several studies of head form, undeveloped bodies and brains, animal behaviour, lack of intelligence and control, mental stupidity and the like, should agree in pointing to the common factor at fault, namely, an undeveloped brain lacking in that refinement of structure so essential to a human mind, will surprise no one with first-hand personal knowledge of mental defectives and their ways. What does cause surprise is that anyone should fail to realize that these results so entirely agree with and support those previously made by Shaw Bolton, Mott, Watson, Tredgold, and others[8] on the meaning and significance of cortical lamination with its supra- and infra-granular cortices. Clearly these defectives have an inefficiently developed supra-granular pyramidal-celled cortex, and are thus unable to control effectively those more animal instincts and reactions mediated, according to Watson, by the polymorphic-celled infra-granular cortex. A deep-seated acquaintance with modern cortical physiology would appear to be the key to further progress in the study of mental deficiency.

2. *Neurological Examination.*

A neurological examination of 158 of these defectives was conducted by Dr. R. G. Gordon. The main objective was the determination of the presence or absence of nervous diseases, apart from the mental

condition, either as a cause or consequence of the amentia.

The general result of this examination shows that, while there are no clinical syndromes at all pathognomonic of mental deficiency, the condition itself appears to be associated with many forms of nerve disorders, thus suggesting the possibility that the under-development so manifest in the brain involves all parts of the nervous system in greater or less degree.

Absence of Clinical Syndromes.—Only five cases showed recognizable clinical syndromes, namely three hemiplegias, one paraplegia, and one case of encephalitis Mental deficiency does not, therefore, appear to be either the result or consequence of serious nervous disease.

Presentation of the Nerve Phenomena Observed.—In view of the absence of recognizable nervous diseases in this group of cases it may be instructive to present the phenomena observed in accordance with the general principles underlying the nervous system, which may be briefly stated as follows :—

"All the phenomena presented by the functioning of the nervous system, normal and abnormal, fall into four great groups : absence, diminution, perversion or exaggeration, of the functions of the three great structural divisions of the nervous system, receptor, internuncial and effector neurons."[1]

The Receptor Side.—As regards proprioceptive sensibility as indicated by a sense of posture in feet and hands, and exteroceptive sensibility, as tested by the patient's ability to localize points of contact on the skin, where an error of more than 4 cm. was regarded as abnormal, and by the ability to discriminate between contact of one or two points on the skin, it is instructive to note that 117 cases (74 per cent.) showed

a diminution or defect of such sensibilities, 13 patients displayed a diminished sensibility to pain, and 2 an exaggerated sensibility to such. These results can, from a structural consideration, only indicate one or other, or both, of two factors: a reduction in the numbers of those centrally conducting receptor axons whose cell stations are in the dorsal nerve root ganglia, or a reduction in the numbers and quality of the receptive cortical neurons, believed by Kappers and others to be the granulous Golgi type II cells of the cortex. This last factor would, of course, necessarily denote a diminution in the sensibilities tested, and the observation thus falls into line with the previously recorded results.

The Cortical Internuncial and Other Tissues.— This tissue comprises practically all of the cortex exclusive of the well-established receptor and effector pathways to and from the brain. The abnormalities attributed, in this series of cases, to this tissue fall into three groups: abnormalities of speech, abnormalities of emotional stability and control, clinical signs of psychoses, and other disordered reactions.

Sixteen cases (10·1 per cent.) displayed abnormalities of speech such as lisping, slurring, monotone speech and staccato utterance. Of these one was hemiplegic.

Thirty-six cases (22·7 per cent.) showed "temper tantrums," three of these being described as violent, whilst one was associated with epilepsy. On the other hand, the matron in charge of the cases and in daily contact with them reported ninety-seven cases (61·4 per cent.) as being bad-tempered.

Four cases showed psychotic symptoms. One had delusions of pregnancy, one of persecution, one

displayed auditory hallucinations, and one—one of the lowest grades of the lot—soiled the linen cupboard with fæces.

Abnormalities of cerebral neuronic arcs also displayed themselves in the forms of exaggerated or diminished movements, chiefly the former. Amongst these were five cases (0·3 per cent.) with epileptic convulsions (grand mal). Thirty cases (18·9 per cent.) displayed choreic movements, fifty cases (31·6 per cent.) suffered from fine and coarse tremors (forty-four and six cases respectively), and one case suffered from spasmodic torticollis with other exaggerated movements.

The Effector Side.—On the other hand, twenty-seven cases (17·1 per cent.) showed a diminution of muscle tonus as displayed by diminished tendon reflexes. Sixty-three cases (39·9 per cent.) showed definite alterations in pyramidal or effector pathway activity, chiefly in the direction of exaggerated reflexes, and of these ten had apparently suffered from congenital syphilis.

Whilst it is not easy to elicit from institutional life authentic evidence of sex manifestations or aberrations, unless they are particularly obtrusive, six of this group appeared to be definitely homo-sexual.

From his much more detailed analysis of these 158 feeble-minded patients Dr. Gordon states that "while abnormalities are distributed all through the nervous systems of these aments, very few show signs or symptoms of definite clinical syndromes." He therefore concludes that "mental deficiency, even in the higher grades, is associated with an imperfectly-developed nervous system, especially of the cerebral cortex"—a conclusion which is thus in strict and independent association with the rest of the research.

3. *General Medical Examination.*

Of all the available cases of this group a thorough and complete general medical examination was carried out by Dr. J. A. Nixon, Professor of Medicine in the University of Bristol and Consulting Physician to this Colony. The objectives of this part of the investigation were the determination of general physical disease as a possible causative factor of mental deficiency, the therapeutic treatment of any disease to which the individual mental deficiency might reasonably be attributed, and the collection of any medical scientific data pointing to the association of any particular type of disease with cerebral amentia.

With these objectives an exhaustive medical examination was made of the various systems of the body, cardio-vascular, respiratory, genito-urinary, etc., and from the general results obtained from this examination it is evident that there is no particular physical medical ailment specially associated with mental deficiency, either as a causative agency or as a usual concomitant, and that mental deficiency is in itself neither a manifestation of disease nor of a complex of diseases. On the contrary, this medical examination again stresses the fact, as do all the other lines of the research, that it is to a lack of development that the physical, medical and mental phenomena are due, rather than to disease as such.

All the ordinary medical ailments prevalent in any general mentally normal population presented themselves amongst this group of high-grade defectives, and did so in about the same general proportions. Syphilis was naturally looked for systematically, and the Wassermann reaction taken in every case. Congenital syphilis was detected clinically in nineteen cases—that is, in 10·1 per cent.—fifteen of which gave

a positive Wassermann reaction, and Hutchinson's teeth were present in three cases. The urine was systematically and completely examined in 119 cases, 88 of which showed no abnormality or sign of disease apart from a very high urobilin content. B. coli bacilluria, without any symptoms, was found in five cases, and marked oxaluria in twenty-five cases. Apart from the fact that the diet of these patients is generous as regards vegetables no adequate explanation of this frequent occurrence of oxaluria is forthcoming, whilst the extraordinarily high urobilin content, even up to 140 times the normal, seems to have no clinical significance, whatever it may have physiologically.

The general deduction from this medical examination is, then, that there is no disease specially associated with mental deficiency other than those of congenital—that is, developmental—origin, as is shown by the high incidence of congenital heart disease amongst these defectives. In some of these cases the heart affection was associated with presumable causal factors such as rheumatism (three cases) or syphilis (seven cases), but in twenty-two cases—or 18·5 per cent.—no such obvious causative factor was discoverable, and hence it seems reasonable to infer that the cardiac lesion was developmental in origin. Amongst the school children of Bristol Dr. Bruce Perry found only 116 cases of congenital heart disease in a school population of 55,000, that is 0·2 per cent. in a normal population as against 18·5 per cent. in a mentally defective one.

4. *Specialist's Examination of the Receptor Organs of Sight and Hearing.*

In view of the very great importance in the development of the normal brain cortex of incoming

exteroceptive stimuli of light and sound waves and the serious results which may accrue from complete or partial deprivation of such senses, it was clearly of importance to submit these defectives to expert examination as regards the eye and the ear. The physiological principle underlying this part of the examination is, of course, that if the receptor organs of sight and hearing, namely the retina and the organ of Corti, are defective or seriously impaired there must be a corresponding diminution of stimuli conveyed to the appropriate cortical areas, with a consequent impairment of development of the brain cells themselves, and a resultant greater or less degree of amentia.

A careful examination of the eyes of 155 of these cases was carried out by Mr. A. E. Iles, F.R.C.S., Consulting Ophthalmologist to the Institution. He states that the chief departure from the normal appeared in these defectives to be the greater incidence of congenital errors of development, as compared with what he himself found amongst 7,721 cases of out-patients at the Bristol Eye Hospital. Thus, amongst these 155 defectives there were eleven cases of congenital cataract—that is, 7·1 per cent. as against 0·5 per cent. in the general population. Other results, with their hospital incidence, may be set forth as follows :—

	155 *Stoke Park Defectives.*	7,721 *Hospital Cases.*
Congenital ptosis ..	1 case, 0·64 per cent.	9 cases, 0·1 per cent.
Convergent strabismus	10 cases, 6·4 per cent.	308 cases, 3·9 per cent.
Divergent strabismus	8 cases, 5·2 per cent.	34 cases, 0·4 per cent.
Nystagmus	9 cases, 5·8 per cent.	19 cases, 0·2 per cent.
Persistent pupillary membrane	5 cases, 3·2 per cent.	2 cases, 0·2 per cent.
Persistent hyaloid arteries	2 cases, 1·3 per cent.	1 case.
Coloboma of choroid	1 case, 0·6 per cent.	3 cases, 0·3 per cent.

As regards errors of refraction, these were very common, and many of them gave an error of more than 1D of either hypermetropia or myopia. In fact, there were more errors above 1D error of refraction than there were less than this, and in addition 35 cases out of 155 (22·5 per cent.) had errors of more than +3 or —3D, and there were four cases (0·2 per cent.) greater than +6 and six cases (0·3 per cent.) more than —6.

In addition to the above congenital or developmental errors other eye conditions were noted. Amongst these were two cases of optic atrophy, two cases of optic neuritis, one of retinitis pigmentosa, one of atresia of the puncta, twenty cases in which the chorio-capillary layer was very definitely deficient, whilst old interstitial keratitis was found in five cases (3·2 per cent. as against 0·4 per cent. in Mr. Iles's hospital population).

Mr. Iles concludes that his examination of the eyes shows a decided fault in development in these high-grade defectives. In twelve cases even the best correction only gave vision less than 6/60, suggesting, of course, a lack of cortical visual neurons. On the other hand, there were few cases of colour-blindness; in fact, only one was definitely truly colour-blind, but a few had defective yellow-green vision. The method employed for testing colour vision was Ishiwara's.

It thus appears from this important investigation into the organ of vision as a receptor avenue of approach to the brain that in defectives the eye shares with the rest of the body and brain a general lack of development, but that in the majority of these cases the eye condition cannot be held responsible for the amentia, and that even the best treatment for the

former would not, in these cases, materially benefit or improve the latter.

5. *Examination of Ear, Nose and Throat.*

An examination was made by Mr. Angell James of 137 of these mentally defective females. The object of the investigation was to determine if there was any variation from the normal anatomical or physiological condition, chiefly of the ears, but also of the noses and throats of these individuals. The cases are divided into two groups as follows:—

(1) Eighty cases, who showed no signs of acquired disease of the ears.

(2) Fifty-seven cases, in which signs of disease were present.

No case of gross congenital deformity was found. In both groups the percentage of cases showing deviation of the septum was approximately the same, twenty-seven in Group 1 and twenty-three in Group 2. In the great majority it was obviously due to trauma, but the absence of a reliable history made it impossible to quote useful figures. Only in 3 per cent. was it sufficient to produce any local symptoms.

Group 1.—In this group signs of infection or other disease of the nose or throat were rare. Only one case of sinusitis was seen, and two cases of atrophic rhinitis. 6 per cent. had been operated on for removal of tonsils, and half of these showed septic remains. Of the remainder, 54 per cent. had perfectly healthy and clean tonsils. Only 5 per cent. of the other 46 per cent. showed any more than some collections of debris in the crypts and very slight evidence of inflammation. In 9 per cent. there was some enlargement of adenoids, one case having been operated upon, but in none was the enlargement causing local symptoms.

Of the hearing tests employed that for the hearing distance of a watch was found to be the most reliable for these cases.

Altogether 180 ears were tested. In 90 per cent. of cases the two ears gave equal results, 31 per cent. gave the normal average of 20 inches. The average hearing distance of all the cases, however, was only 11 inches. In 15 per cent. there was, in addition, slight reduction in the hearing time by air conduction for 32 and 256 [D.V.S.] tuning forks. All the other tests for bone conduction, upper tone limit, etc., gave normal results.

Group 2.—In this group there were 23 per cent. showing perception (nerve) deafness. The remaining 67 per cent. had some lesion of the conducting apparatus, 7 per cent. had active suppuration, and the remainder showed cicatricial and catarrhal changes ; 31 per cent. were unable to hear the watch, while the average hearing distance for all was 3 inches.

In this group 53 per cent. had perfectly healthy and clean tonsils, 16 per cent. had been operated upon, but half of these showed septic remains.

The figures show that although there were no cases of gross congenital deformity in these groups, in the group without any sign of acquired aural disease the average auditory acuity was slightly subnormal. But in no case was it so marked that any failure of development of the brain could be attributed to lack of stimulation via the auditory apparatus.

On the other hand, there was no evidence that any disease of these regions is associated with, or abnormally prevalent in, these groups. Although 41 per cent. may seem a large percentage for cases showing evidence of acquired aural disease, the standard set was very high. Even very doubtful

evidence was considered sufficient to exclude the case from the normal group.

No association could be shown between mental deficiency and focal infection from these regions, or enlargement or infection of the tonsils and adenoids.

The subnormal auditory acuity is in accordance with the subnormal reaction of the nervous system in these cases.

6. *X-ray Examination of the Skull.*

For technical and clinical reasons this examination of the skull by Dr. T. B. Wansbrough has had to be postponed, but will be undertaken at a later date.

7. *Psychological Experiments dealing with Language Ability, etc.*

The results of these experiments were communicated by Drs. Gordon and Norman to the British Association for the Advancement of Science at the Centenary Meeting held in London in 1931. They are now being published in the *British Journal of Psychology*, vol. xxiii., 1932.

Causes of Mental Deficiency as Revealed by this Series.

In view of the differences of opinion as to the hereditary or acquired origin of mental deficiency the following analysis of the 162 cases may prove of interest.

Of the 158 cases examined by Dr. Gordon there were only three which gave a "clear and unequivocal history of either injury or infection exclusive of syphilis." In one case there was evidence of a severe injury to the frontal region of the head; of severe injury to the left parietal region in another, and a history of encephalitis in a third. Notwithstanding that such injuries do not definitely exclude hereditary

transmission, these three cases may be tentatively accepted as of secondary origin.

Of the 162 cases comprising the series there was no previous history of any sort in twenty-five instances. Details of the parentage and familial relationships were available in the remaining 137 cases, with specific information in 55 cases of the presence or otherwise of mental disorder or deficiency in the parents or blood relations. In these 55 cases there was direct and unequivocal evidence of the hereditary origin of the condition in 46 cases, and strong presumptive evidence of the same in the remaining 9 cases.

The relative proportions of hereditarily transmitted, and of secondarily acquired, amentias thus work out in this series as follows :—

Number of cases, 137 (hereditarily transmitted):		
Direct evidence	46 cases=	33·6 per cent.
Presumptive evidence ..	9 cases=	6·6 per cent.
Insufficient evidence available	82 cases=	59·8 per cent.
Number of cases, 158:		
Secondarily acquired ..	3 cases=	0·2 per cent.

In this series there can, then, be no doubt of the strong influence of heredity in the transmission and causation of mental deficiency.

CONCLUSION.

This and other allied investigations into mental deficiency seem to suggest, if not indeed to prove, that mental deficiency is a manifestation of improper development and not of disease, so that the problem becomes one of preventive medicine, eugenics and embryology rather than of curative medicine. If, then, researches such as these should succeed in

directing the attention of the profession and the lay public to the true causes of a great national problem, the labour and time devoted to them will not have been in vain.

REFERENCES.

[1] Berry, R. J. A., *Brain and Mind*, chapters 41, 42 and 43. New York: The Macmillan Co. 1928.

[2] Doll, E. A., *Anthropometry as an Aid to Mental Diagnosis.* Publications of the Training School, Vineland, New Jersey, No. 8, February, 1916.

[3] Gordon, H. L., " A Note on Diagnosis of Amentia (Mental Deficiency) in Africans," *The Kenya and East African Medical Journal*, vol. vii., No. 8, November, 1930, pp. 208 to 214.

[4] Berry, R. J. A., *Report to the Edward Wilson (Argus) Trust on Mental Deficiency in the State of Victoria, with Suggestions for the Establishment of a Child Guidance Clinic.* Published in and by the *Argus*, Melbourne, 1929.

[5] British Association for the Advancement of Science: *Anthropometric Investigation in the British Isles. Report of the Committee (being the Final Report). Reprinted, with additional illustrations, by permission of the Council from the Report of the British Association.* Dublin, 1908. The Royal Anthropological Institute, 1909.

[6] Berry, R. J. A., and Porteus, S. D., *Intelligence and Social Valuation. A Practical Method for the Diagnosis of Mental Deficiency and Other Forms of Social Inefficiency.* Publications of the Training School at Vineland, New Jersey, Department of Research, No. 20, May, 1920.

[7] Berry, R. J. A., " The Correlation of Recent Advances in Cerebral Structure and Function with Feeble-mindedness and its Diagnostic Applicability," *Medical Journal of Australia.* Supplement. (Transactions of Congress.) 7th June, 1924, pp. 393–400.

[8] Shaw Bolton, J., *The Brain in Health and Disease.* London: Edward Arnold. 1914

Shaw Bolton, J., " Recent Researches on Cortical Localization and on the Functions of the Cerebrum," article in Leonard Hill's *Further Advances in Physiology*, pp. 284–350. London: Edward Arnold. 1909.

Mott, Watson and Tredgold, various contributions in the *Archives of Neurology*, vols. ii., iii., iv. and v. London: Macmillan & Co. Ltd. 1903–1911.

[9] Vint, F. W., " A Preliminary Note on the Cell Content of the Prefrontal Cortex of the East African Native," *East African Medical Journal*, May, 1932.

MEDICAL EDUCATION.

BY

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A FEW years ago Dame Janet Campbell's *Report on Maternal Mortality* caused much concern among the profession and the public, and an official inquiry showed that there were various causes for the unsatisfactory state of midwifery practice there set out, one of the most important being defective education. One wonders what would be the result of a similar inquiry with regard to medicine generally; it would probably show, there also, a serious inadequacy with one of its causes the system of education of medical men, with this difference: that while in midwifery it is starvation and neglect, in medicine it is over-anxiety and engorgement. In medicine the errors are, generally speaking, not so obvious, the disasters not so dramatic, as in midwifery. The fault is not primarily with the practitioner; he has to take what is given him. The onus lies heavily on those responsible for his training and qualification. We must, however, remember that with the rapid advance in medicine much more is expected and required, and our system of education has not been able properly to accommodate itself to the changes that have taken place.

The newly-qualified man of to-day is no doubt more efficient than was his predecessor of forty years

ago, but his ability to make use of his knowledge is no better, if as good. Probably, with his greater knowledge at the moment of starting practice, he has less need to use his powers of observation and deduction, and if these fail him as his lately-acquired knowledge fades, will his wisdom grow ?

Unfortunately, we cannot shut our eyes to the fact that excellent as are the medical practitioners of to-day, there are yet too many whose ignorance and incapacity are only cloaked by dogmatism and craft, and others whose want of exercise of their reasoning powers has caused them to fail in professional efficiency.

If, as is the case in the great majority, proficiency has been attained, has there not been much waste of money that could ill be afforded, and, worse still, waste of time, waste of too much of the best space of life, time spent in useless compulsory lectures, in acquiring unwanted knowledge, in examinations and the preparation for them ? Briefly, time and money have not been spent to the best advantage, and opportunities have been lost.

One of the serious faults of medical education is the putting an exaggerated value on mere knowledge as apart from reason, the attempt to learn too many facts, to keep pace with new knowledge while failing to give up or to defer the teaching of what is obsolete or not wanted at the moment.

A further important defect is the division of study into watertight compartments, the want of association of one part with another, so that when the student passes from one compartment to another he is apt to shut out of his mind what he learnt in the first. For instance, anatomy and physiology are taught for two years with practically no reference to clinical facts ; by the time a medical student gets into the ward, how

much of his examination anatomy does he remember or need? Still more does this apply when he gets into practice. Knowledge is, of course, essential, but dry facts without an appreciation of their import can never be interesting. The block system of teaching is the result of a similar system of examinations, and if one is to be altered, so must the other be.

Unfortunately, examinations have become a fetish. It is now a question of training primarily for examination, and incidentally for practice, whereas it should be training primarily for practice and incidentally for examination. The result is that studies are designed with the examiner in view and not the patient. Remarkable evidence of this is the publication of numberless books written especially for examination purposes. Why is this necessary?

By encouraging an accumulation of facts rather than methods of observation and deduction, examinations defeat the aim of teaching to think. What actually is the value of examinations as conducted to-day? Do they show us anything of the practical competence of the examinee? Is it possible in a few questions to find out what we really want to find out?

Why, it is asked, change our system if the British is the best in the world? We must change because, though the best, it is far from being perfect, because medicine is constantly changing and advancing, and education to be effective must keep pace with it, and because there is much to be learned from the systems of other countries, even if they are not in every way better than ours.

What is the remedy? We must first know what we want? The public want practical men, men whom they can consult on every subject concerning their health, who will tell them what they ought to do and

when it is necessary for them to seek further advice. The public do not want essay writers only; not, for example, the highly-qualified medical man who could not set a simple greenstick fracture in the forearm of a child, though he became later, in a small area of the body, a specialist of some repute.

The national medical service of the nation wants competent practitioners, general practitioners first. Sir George Newman has told us lately how important is the practitioner in the medical service of the country. The general practitioner can, if necessary, become a specialist; the man who has been trained only to be a specialist can never become a general practitioner, who is not only a potential specialist but is also, if he has been properly trained, a scientific researcher, a practitioner of preventive medicine, with unique opportunities of studying the earliest stages and the life history of disease.

The qualification of a general practitioner is fundamental to the making of a specialist, that is if he is to treat human beings and not merely isolated bits of their bodies.

There is no foundation whatever for the idea that any one medical man cannot know enough to give his patient the best value of medicine and when to call in the expert. Incidentally, are we not apt to forget that the doctor has in his books a long array of consultants? And, after all, the majority of illnesses met with in practice do not require the assistance of a specialist.

If we have decided that what we have to train and qualify is a general medical practitioner, how are we to start? We must consider who are to be the students. If it is useless to waste first-class education on third-class persons, do not abolish the first-class

education but the third-class person. There is no doubt that under the British system some unfit men are admitted as students, men of unsuitable character or of insufficient intelligence. In America there is a regulated system of selection and many are rejected, but it is doubtful whether this practice would suit us in Great Britain. The selection of candidates for naval cadetships, as is done by a special Board, is a method that might be better. The present system of the survival of the fittest is no doubt wasteful of educating machinery, and some form of selection after the first year of study might be practicable.

Sir George Newman, fourteen years ago, wrote: "We require a man of high character, able and willing to maintain the true dignity of a great profession, and to live up to the high ethical traditions of medicine; of good general education, of interest, activity and some *savoir-faire;* a man of learning and knowledge in his vocation, with technical skill and medical experience; but, above all, a practical man, with ideas and application, with a forward looking mind, able to participate in the growth and development of medical science, trained in the scientific method and inspired by the scientific spirit; in other words, a man of accurate observation, of ability in experimentation, and of sound judgment and interpretation."

Having found the man we want, how are we to improve his education? Not by adding to the length of the curriculum, which has already reached the practical, economical, physical and mental limit, and is out of proportion to the result or need.

We must give up the attempt to do the impossible in learning endless facts, remembering, however, at the same time that practical medicine is the application

of many sciences. There must be constant revision as to what is to be added to and what is to be excised from undergraduate studies; but trouble comes when decision has to be made as to what shall be omitted. It will be necessary for some independent body to determine this; for while all concerned agree that economy is necessary, each in turn says: "Not in my department."

We want a higher standard for entrance, a command of the English language, so that expression may be given clearly to our thoughts by speech or by writing. There must be some knowledge of the fundamentals: physics, chemistry (inorganic and organic), and biology, not only because of their relation to every branch of medicine, but also in order that the training they bring of scientific methods, exact observation and logical deduction may be thoroughly inculcated and colour the whole of the student's professional work both before and after qualifying. In his professional studies, in particular sections of more strictly medical work, attention will naturally be drawn to the importance of those subjects. This continuity and association of subjects must pertain throughout the whole curriculum. There must be nothing useless; each subject must be considered in its proper place and proportion. First will come a study of the body, its form and function—anatomy and physiology—but not in too much detail. In surgery, medicine and midwifery the special details of these subjects should be learned as their need and application become obvious; thus will this knowledge be appreciated and retained, and for this reason the sooner some sort of clinical work begins the better, even in the first year. When work begins in the wards it is apt to be forgotten how necessary it is to have a knowledge of the body

in health, and to realize what wide variations of form and function are consonant with health.

There is little doubt that too much time and attention is given to surgery, not its general principles, which are essential, but its specialized details. Much time is wasted in the theatre and the lecture-room acquiring knowledge and skill of a kind that is only required by the specialist, and too little, much too little, time is given to medicine, both in the wards and the out-patient departments. Here clinicians are too apt to miss the constant opportunities of teaching the study of man as part of the study of disease, and illustrating by clinical example the reasoned deductions of books and lectures.

There is too great a temptation to demonstrate and lecture on the less common things, and to slur over the things of daily occurrence, which are, in fact, not only more essential to practice, but often much more difficult to explain because of the habit of taking them for granted. Throughout the curriculum it is necessary to remember that it is a general practitioner that is being made, not a specialist—that specialist study can or should only be made after qualification.

The question of lectures is important; there are far too many that are compulsory. The having to attend so many, the signing up, are an evil influence that pervades all study and should undoubtedly be done away with. They are the heritage of an old order that should be dealt with by an iconoclast. Good lectures, good demonstrations, clinical or other, need no compulsion for attendance; if they are not good they are a serious waste of time. Compulsory lectures give the bad lecturer too good a chance. It goes without saying that skill in surgery or eminence in medicine does not necessarily mean skill in teaching.

Good lecturers are none too common; they are born, not made, and the birth-rate is not a high one.

Are examinations, as now held, necessary? A uniform qualifying final examination can hardly be abolished, and other examinations for diplomas of special distinction or special branches of medicine should be taken after the qualification. There is not space here to discuss the reason, but it is probably accepted generally that the one-portal system is the ideal; unfortunately vested and local interests stand in the way of its adoption. The examination itself might quite well be held in the various teaching centres. It should be, so far as possible, practical. Also it should be required that all the subjects necessary for qualification be passed at the one time. If the system of examination is satisfactory there need be no hardship. If a man can only pass in three subjects by taking one at a time, it means that he cannot carry in his mind at the same time the other two, so that if the examination is to be a test of his capacity he is, strictly speaking, only fit to practise in the subject last passed; either this is so or the method of examination is wrong.

It is, no doubt, generally recognized that examinations are unsatisfactory, and it should not pass human wit to find a better means of testing capacity. An expert obstetrician lately said that in half an hour's practical examination he could test the capacity of a midwife better than with pages of papers.

Not enough, if any, consideration is given to the knowledge of the teacher of the capacity, in every respect, of the candidate he has taught. Such a practice might allow of favouritism, but that would be checked by the final examination by an outside body; even if not, it is no more open to objection

than the element of chance which enters so largely into the present system. It is the intermediate examinations that distract the student, waste his time, misdirect his energies and interfere with the ordered continuity that there should be in his studies. Is there any reason why they should not be held by the school itself ?

It might well be the rule that men could only proceed from one period of education to another after passing a local examination, and this should be conducted by the men who, by their practical experience, know what the student should know of the subjects in which he is being examined. For instance, before a student becomes eligible for work in the ward as dresser or clinical clerk he should have passed an examination in anatomy and physiology held by physicians, surgeons, and obstetricians, as they must know better than the professors of anatomy and physiology what of these subjects he will require in the practice of surgery, medicine and obstetrics. The education and examination of the men who are to be entrusted with the lives and health of the nation have been determined to too great an extent by those who are not in close contact with general practice and cognizant of its requirements.

Education, of course, never finishes, certainly not with the final examination. But at what period of his education does a man become efficient enough to practise alone ? It is the attempt to pass out men fully qualified for practice that causes the curriculum to be so crowded. Most men who have been some years in practice will say that he is certainly not fit when he has just passed ; many men look back and wonder how they had the temerity to practise without first doing at least one resident job. The right to

practise alone should not be granted until at least a year has been spent in residence at some hospital, where the novitiate may learn the technical application of his recently-acquired knowledge. Against this it is argued that there are not enough jobs for all, but with the numerous municipal hospitals now coming into being there must be many more opportunities, and, as a matter of fact, at the present time many institutions are finding considerable difficulty in getting residents.

No system of education can be considered complete without provision for postgraduate study, and many schemes are being formulated and put into practice to make it generally available; but none can be more effective than the provision of hospital beds, where the general practitioner can not only treat many of his patients, but also come into contact with colleagues and consultants, and so help to keep himself conversant with current methods and ideas.

Many councils are already discussing the means whereby medical education may be improved, but it does seem desirable that some disinterested committee should inquire into the whole question and report to the General Medical Council, which must be the ultimate authority. Probably the British Medical Association, in touch as it is with all parts of the profession, with its experience and influence, would be the most appropriate and useful body to set up a small and authoritative committee.

REFERENCES.

Sir George Newman, *Notes on Medical Education in England.* London, 1918, H.M.S.O.

Professor Berry, *Methods and Objectives of Medical Education.* 1929. (See page 247 of present issue).

C. M. Wilson, "The Student in Irons," *Brit. Med. Jour.*, 1932, i. 485.

H. S. Souttar, "The Education of the Medical Student," *Brit. Med. Jour.*, 1932, ii. 427.

St. Mary's Hospital Gazette, April–June, 1932.

DYSPHAGIA WITH ANÆMIA, WITH REPORTS OF FIVE CASES.

BY

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THE syndrome to which we now assign this non-committal title is of no great rarity but of some importance, were it only because the first diagnosis is often "hysteria." More than fifty years ago Weir-Mitchell drew attention to the intractable nature of "hysterical dysphagia," and the tendency of these patients to develop a profound anæmia was observed even earlier than this. When this anæmia becomes manifest, with pigmentation and achlorhydria, a diagnosis of pernicious anæmia is suggested, while the cracks at the angles of the mouth, and the chronic glossitis may lead us astray by simulating a syphilitic condition.

Clinical Picture.—The patients are all women, and, what is more, generally women of middle age, thin, pale and "worried." Advice is usually sought on account of difficulty in swallowing, progressive over months or years, which has gradually reduced the victim to a fluid diet. The food "sticks in the swallow," so that the patient chokes and has to bring it up; once it can be got to enter the gullet there is no further difficulty. There may be considerable variation from day to day in the degree of obstruction.

indicating an element of spasm. Sometimes if the first mouthful can be forced down there is no further trouble. There is little wasting, but complaints of feelings of suffocation, wind, palpitation, etc., are common, strongly suggesting a neurosis. The anæmia is usually of long duration, the complexion "earthy," and often there is pigmentation in addition; but on investigation the first proves to be of secondary type with a low hæmoglobin percentage, a colour index about 0·7, and some anisocytosis. The mucous membranes of the lips, mouth and pharynx are thin, pale, dry and sore; the cracks at the angles of the mouth, already mentioned, are commonly found; and the tongue, although free from fissures, is partly or wholly denuded of papillæ, glossy and dry. There is no history of syphilis or miscarriages and the Wassermann test is negative. Many of the patients are edentulous, some show enlargement of the spleen. Achlorhydria or oligochlorhydria is usual. The swallowing of a barium feed under X-rays may reveal some hesitation at the commencement of the act of swallowing, but once the feed has entered the gullet its further progress is normal. Direct examination of the œsophagus may show either a spasmodic contraction or an actual constriction of the upper end, below which it is normal; in either case the atrophy and fragility of the mucosa is conspicuous.

Cases.—The five cases reported below are relatively early, and were diagnosed on clinical grounds. They do not, therefore, show either the duration of symptoms or such advanced pathological changes as some that have been recorded.

(1) S.L., aged 49. May, 1932, complains of difficulty in swallowing solids during one year; the food "catches in the swallow," and she usually has to bring it up, so that now she

can only take fluids, and even these pass very slowly. She is getting thinner, but not much; always thin. All her life she has been anæmic, and has suffered from indigestion and wind, but never before had throat trouble. No pain. All symptoms are getting much worse, she is "always tired." The difficulty in swallowing varies, "comes and goes"; but there is now at all times quite considerable difficulty.

On examination a thin woman, very pale, with an "earthy" complexion, and some darkening of the skin at the sides of the neck and ribs and over the knees. Lips very pale; the tongue shows large areas smooth and devoid of papillæ, but no cracks. At the angles of the mouth are well-marked cracks; inner surfaces of cheeks pale and sore, palate waxy yellow. Only lower incisor teeth present, some retraction of gums. T. 97·8°. P. 64. Spleen not enlarged.

Blood: Hb. 60 per cent.; R.B.C., 4,000,000; C.I., 0·7; W.B.C., 7,000. "The red cells stain comparatively well; anisocytosis and poikilocytosis are moderate, no megalocytes; no nucleated reds; no abnormal white cells." W.R., negative. Hæmolysis begins in 0·42 per cent. saline, complete in 0·32 per cent.* Van den Bergh negative, direct and indirect. Test meal: no free acid in fasting fluid or first four specimens; at two and a half, three, and three and a half hours free acid 0·022%,* combined 0·11%.† Barium bolus: some hesitation at entrance to œsophagus, otherwise normal. Direct laryngoscopy: the opening of the œsophagus is a transverse slit 5 mm. across with apparently a post-cricoid web of mucous membrane round the posterior margin, and just below this a similar anterior web. The mucosa very pale, thin and fragile, without the longitudinal folds usually associated with spasm; despite care in dilatation, the mucosa over the back of the cricoid split. Large tube passed to the cardia; normal œsophagus with very pale mucosa, no spasm.

Treatment: Pil. ferri. gr. x. t.d.s., later gr. xv. t.d.s. June, 1932.—"Much better" (looks it); the swallowing now normal for all ordinary solids. July 27th.—The anæmia is not noticeable; discharged to her own doctor to continue iron.

(2) Sarah P., aged 47. May, 1932, complains of "bad throat," excess of phlegm and difficulty in getting it up, with pain on attempting to swallow solids, although she can always get these down with an effort; symptoms have been present

* *i.e.* Normal. † Reckoned as HCl.

during several months. She used to get suffocative attacks, during which the throat closed up and she felt she could not breathe. For many years she has suffered from palpitation and wind; she has always been anæmic (not gravely), not getting worse.

On examination a thin, pale woman, manifestly "neurotic." The complexion is distinctly earthy, with dark pigmentation of the neck. The lips are very pale, there is a deep crack at each angle of the mouth, the mucous membrane of the cheeks and soft palate is pale, thin and "dry," that of the nose is "rather dry," and the back wall of the pharynx "very dry"; larynx normal: edentulous. T. 97°. P. 72.

Blood: Hb. 50 per cent.; R.B.C. 4,900,000; C.I. 0·5. "The red cells show a bigger central-poorly-staining area than usual; definite anisocytosis, many red cells being smaller than normal; except for microcytes everything else appears normal." Fragility of corpuscles; hæmolysis begins in 0·42 per cent. and is complete in 0·32 per cent. saline. W.R. negative. Van den Bergh negative, direct and indirect. Test meal: fasting and first two specimens, no free HCl; at one and a half hours a trace, and at two hours a small trace.

This patient did not wish for any investigation of the dysphagia; she agreed to allow examination, and was admitted for the purpose, but the ward had to be closed on account of infection; she was sent to the Out-Patient Department, taking gr. xl. daily of the pil. ferri. This so much improved her that a month later she declined any further examination; after three months the complexion was good, although still somewhat pale, the cracks had disappeared and the wind, palpitation and general health were very much improved; "the nerves have improved enormously."

(3) Annie B., aged 44. August, 1931, complains of nine months' difficulty in swallowing, all solid food tending to stick at the Adam's apple; she can only take fluids. She has for many years been anæmic, and this is tending to get worse; the digestion is poor, appetite good. She has always been thin, but has definitely lost weight recently.

On examination a small, thin, "worried," very pale woman—the pallor is remarkable—but no pigmentation is noted. Lips quite white, deep cracks at angles of the mouth; mucosa of interior of mouth pale and sore; tongue perfectly smooth, sore and dry; pharyngeal mucosa dry and very thin; teeth good; spleen normal; temperature subnormal.

Blood: Hb. 65 per cent.; R.B.C. 3,600,000; C.I. 0·9; fragility normal (1932). W.R. negative. Test meal: complete absence of free HCl in all specimens. Barium bolus; some gulping and hesitation in the pharynx, spasm of cardia, no dilation or other abnormality.

Direct œsophagoscopy: the mucosa is remarkably pale; well-marked spasm of the entrance of the œsophagus which yielded to the passage of a large tube; below this the œsophagus was quite normal, the tube passing through a normal cardia into the stomach.

This patient ceased to attend; she returned in April, 1932, when the swallowing was quite good for all food. But the anæmia was even more conspicuous, although she had gained several pounds in weight; she was unable to sleep. Pil. ferri., gr. xl. daily was prescribed. By July swallowing, sleep and digestion were quite satisfactory, the cracks of the mouth had healed, the soreness had disappeared (although the tongue was still smooth), and there was no obvious anæmia; she continues under treatment.

(4) Florence D., aged 46. April, 1932, complains that during the last five months food lodges in the throat, and she can now only take fluids or quite soft food. "Once it starts it goes down all right." At night she gets a feeling of suffocation in the neck; she has always been thin, but since the trouble started has lost weight rapidly. Four years ago she choked on her food; even before then she had "a small swallow," and had to be very particular in mastication. Since that time she has been even more so, but in spite of this the difficulty in swallowing has at last driven her to seek assistance. She has been anæmic all her life, but manages to get about and do her work, though tired on any extra exertion; the anæmia is not getting worse.

On examination a small, thin woman of remarkable pallor, the complexion earthy, no pigmentation. Lips very pale, definite crack at each corner of the mouth; mucosa of mouth pale and sore; whole tongue is smooth, glossy, "dry-looking" and sore, without cracks; pharyngeal mucosa thin and pale; edentulous; spleen not enlarged; temperature subnormal.

Blood: Hb. 70 per cent.; R.B.C. 4,400,000; C.I. 0·7. "The red cells do not stain well; there is moderate anisocytosis, no megalocytes, no microcytes, no nucleated reds." Hæmolysis begins in 0·42 per cent. saline, is complete in 0·30 per cent.

W.R. negative. Test meal; no free HCl in fasting fluid or any of the specimens. Barium bolus (not observed) reported normal.

Direct œsophagoscopy: the œsophageal opening is very small (=circle of 4 mm. diam.) and tight; in passing the speculum the anterior wall was lacerated—"apparently an œsophageal web." Below the constriction the œsophagus was normal but pale.

Treatment: gr. lx. daily of the pil. ferri.

Three months later she was quite different. Swallowing was comfortable for everything except crusts; digestion good, no evidence of anæmia; cracks and soreness of mouth have disappeared, but tongue still smooth.

(5) Dorothy A., aged 42. September, 1932, complains that she cannot swallow solids. Eighteen months ago she could not take meat, and for the last three weeks she can take no solids at all. "It is like a tight band across the top of my throat when I swallow." The food sticks, but by an effort it could at first often be forced down; not intermittent. She feels low, has always been thin, and her own doctor thinks she has recently got thinner, but she has not noticed this; she can do her ordinary housework. She has been slightly anæmic for seven years. General health, digestion, sleep, "nerves," good.

On examination a rather pale, tall, slight woman; the complexion is clear, no evidence of wasting, lips and conjunctiva good colour. Insides of lips sore (six weeks), small crack at each angle of mouth; tongue has lost papillæ along either margin, not in centre. Edentulous. Granular pharyngitis, mucosa normally pink; nose, larynx normal. T. 96°.

Blood: Hb. 65 per cent.; R.B.C. 3,200,000; C.I. 1·0; W.B.C. 5,000 (normal differential count). "Red cells show anisocytosis, poikilocytosis and increased central vacuolation; halometer reading 4·5°; size of corpuscles=7·64μ." Fragility normal; W.R. and Van den Bergh negative. Although not the face, the body is very thin; no pigmentation, spleen normal. Test meal; well-marked *excess* of free HCl and total acid in fasting fluid and all subsequent specimens; *e.g.* free HCl at half hour=0·15 per cent., at one hour 0·25 per cent., at two and a half hours 0·33 per cent. Barium feed; some holding up of the feed behind larynx (which suggested to Dr. Mayes a small pouch), otherwise normal. Direct œsophagoscopy: mucosa pink; the opening of the gullet

at first appears normal; but on attempting to pass tube, although there is no trace of spasm there is a firm web limiting the lumen to 10 mm. diameter, running semi-circularly round posterior wall behind cricoid; slight force dilated it with just a trace of bleeding. Lower down the œsophagus shows a rather red mucosa, and near each end patches of whitish "sodden" epithelium, *i.e.* œsophagitis; cardia and stomach normal. Following the dilatation she can swallow normally, and has begun to take iron.

Clinically this case is typical, except that the anæmia is not conspicuous; the hæmoglobin figure is unexpectedly characteristic, although the C.I. is high; the marked hyperchlorhydria is in contradiction with the usual findings. The œsophagitis is an unusual feature; the hypopharyngeal "band" affords an insight into the causation of the dysphagia, but an element of spasm must be postulated to account for the degree of difficulty present.

Comment.—The ætiology of this condition is obscure. D. R. Paterson[1] and A. Brown Kelly, who first drew attention to the actual nature of the œsophageal changes, definitely consider these primary, and the anæmia secondary to interference with nutrition. "At a meeting of this section in 1919 Brown Kelly[2] and I drew attention to a clinical syndrome in women, the essential feature of which is a gradually increasing inability to swallow, due to spasm of the pharyngo-œsophageal sphincter; often associated with atrophic changes in the buccal and pharyngeal mucosa, and at a *later stage with anæmia*, which is to be regarded as a *secondary manifestation* of the dysphagia. Plummer, approaching it from the physician's point of view, called it hysterical dysphagia, and later Vinson[5] laid stress on the anæmia and splenomegaly. . . . Such patients are sometimes labelled hysterical, often incorrectly, and if they appear unduly nervous they are only observing a caution that the dread of choking imposes. . . . The blood changes are those of chlorosis and secondary

anæmia with considerable reduction in the hæmoglobin (Munro Cameron)."[6] The patients are women and come under observation in middle life with a long history of gradually increasing dysphagia, which eventually confines them to a fluid diet. Mild glossitis with atrophy may be early; later the tongue is smooth and the buccal mucosa dry and pale. (The pharyngeal atrophy secondary to atrophic rhinitis does *not* lead to dysphagia.) Anæmia is a *late* symptom of gradual development. The spleen may be enlarged. Malignant disease is often a late development of this syndrome.

On the other hand, it has been suggested that the anæmia is the primary condition of which the changes in the alimentary tract are sequelæ. Dr. R. S. Johnson[3,7] has reported six cases of dysphagia with anæmia, under Dr. G. Graham and Professor F. R. Fraser at St. Bartholomew's Hospital. All were females, aged 33 to 48. The anæmia was marked, of secondary type, hæmoglobin 32 to 50 per cent., C.I. 0·5. The complexion is striking, brownish-yellow, suggesting pernicious anæmia. Glossitis and cracks at the angles of the mouth were noted in four; dysphagia was severe in two, mild in three, none in one. Œsophagoscopy: two normal, pallid mucosa in one, an area of œdema bleeding readily in one, impossible on account of spasm in one. All showed complete achlorhydria; only one (without dysphagia) slight enlargement of spleen. The others showed increased fragility of corpuscles, hæmolysis beginning in 0·55 per cent. saline and being complete in 0·45 per cent. He suggests initial specific anæmia with increased fragility, and achlorhydria, and *secondary* changes in mucous membranes producing dysphagia.

My own cases definitely support the view that the anæmia precedes the dysphagia. Further, in Case 3 relief of the dysphagia during eight months (so that the weight increased) brought no improvement in the anæmia; while in Case 2 treatment of the anæmia seems to have had a beneficial influence on the dysphagia. On the other hand, I have been unable to confirm any increase in the fragility of the red cells. This might be explained on the ground that the anæmia in my cases was much less marked than in those of Dr. Graham; yet it was of long duration in all five, so that this slight increase in fragility can hardly be an essential feature. Again, although Dr. Graham's cases showed profound anæmia, in only two was the dysphagia severe. Also, it seems at least possible that in other cases a certain degree of anæmia has long existed without attracting much attention, until the progress of the dysphagia forces the victims to seek advice; and perhaps actual interference with nutrition produces a conspicuous increase in a previously mild anæmia.

In fact, one is tempted to suggest that the actual clinical syndrome presents three main features: dysphagia, anæmia and stomatitis or glossitis; and that of these three any one may for a time hold the field, until either its increased severity or the effects of one of the others drives the sufferer to seek relief. So that the case may appear with a long history of increasing dysphagia and recent anæmia, or as long continued anæmia and subsequent dysphagia, or even as a stomatitis with difficulty in swallowing as a complication. (Indeed, on reference to my notes I have found two cases of sufferers from "sore mouth," of whom both complained of some trouble in swallowing and one had definite anæmia.) It seems probable

that some toxic or perhaps dietetic factor* is responsible for the whole of the changes observed. But as to the nature of that factor we are still quite in the dark.

Treatment.—This is simple. The dysphagia is relieved by the passage of a large tube, a procedure which demands some care owing to the fragility of the mucous membranes. The anæmia is best treated by large doses of inorganic iron, gr. xl. to gr. lx. of the pil. ferri daily; this has proved much more efficacious than organic iron or liver extract, etc.[4] The medicinal treatment needs to be continued for four to six months at least, and the patient should be kept under observation for two years, in case there is any recurrence of dysphagia (treated by bougies) or other trouble. The observation of Paterson on the subject of malignant change demands attention.

Summary :—

1. The clinical features of "dysphagia with anæmia" are described.
2. Five cases are reported in detail.
3. The ætiology and treatment are discussed.

I am indebted to Dr. A. D. Fraser for the pathological reports cited.

REFERENCES.

[1] *Proc. Roy. Soc. Med.* (*Section of Laryngology*), 1930–31, xxiv. 1,203.

[2] *Ibid.*, 1918–19, xii. 235.

[3] *Ibid.*, 1930–31, xxiv. 1,206.

[4] *Ibid.* (*Section of Therapeutics*), 1930–31, xxiv. 543 (with bibliography).

[5] "Hysterical Dysphagia," *Minnesota Med.*, 1922, v. 107.

[6] *Quart. Jour. Med.*, 1928, xxii. 43.

[7] *Ibid.*, 1932, N.S., i. 41.

* To be quite *dernier cri* one ought to postulate a hypothetical allergic state.

ALBUMINURIA IN PREGNANCY.*

BY

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THE object of this paper is to endeavour to assess the significance of the presence of albumin in the urine of a pregnant woman. It is obviously of the greatest importance to both midwife and doctor that a condition which is rapidly tending to a catastrophe should be recognized and promptly dealt with, while it is equally important not to frighten the patient and her relatives by needless excitement and alarming prognosis.

For clinical purposes it is convenient to regard the presence of albuminuria with pregnancy under five headings :—

1. Cases in which it is of no pathological significance.
2. Cases of infection of the urinary tract.
3. Cases of previous nephritis associated with pregnancy.
4. Cases of so-called "pregnancy toxæmias."
5. Low reserve kidney.

* Paper opening a discussion at a meeting of the Bath, Bristol and Somerset Branch of the British Medical Association held on 25th May, 1932.

The association of albuminuria with pregnancy is surprisingly common. In the six years between 1926 and 1931 793 cases were investigated at the Bristol Royal Infirmary. During this time about 8,000 patients attended the ante-natal clinic, so that albuminuria — to an extent which necessitated investigation—was noticed in 10 per cent. of all pregnancies.

Out of these 793 cases 81 were due to pyelitis, 50 were due to eclampsia with fits, 21 were due to toxic vomiting, 1 was due to acute yellow atrophy, 21 were due to acute nephritis; making a total of 174 cases.

There were eleven deaths from eclampsia out of fifty cases, but of these nine were admitted very ill indeed from outside. During the same time only eight cases with one death developed on our own District. I have had difficulty in analysing the remaining 619 cases, but roughly one-half were apparently not pathological, and 300 were very mild nephritis, or "low reserve kidney," or mild toxæmic conditions including pre-eclampsia, *i.e.* about 60 per cent. of mild albuminurias were pathological to some degree.

To return to the five groups.

1. In a number of women traces of albumin appear in the urine for no apparent pathological reason. It is, of course, necessary to obtain a catheter specimen to avoid contamination from vaginal and vulvar secretions. The condition is commonly associated with large pregnancies, twins and hydramnios, and there may be some œdema of the feet also. These cases should be carefully investigated before deciding

that the albuminuria is of no significance, and the condition calls for careful observation during the pregnancy, although it seldom produces any real pathological symptoms.

It is of interest to note here that there are definite but slight changes in the urinary tract during every normal pregnancy. These consist of slight changes in the renal parenchyma, which have been dignified by the name of " pregnancy kidney " by some German authors. There is also a well-developed hypertrophy of the lower end of the ureters (Hofbauer[1]), and Baird[2] describes a very definite dilatation of the ureters in which the right side predominates. These conditions probably determine a number of cases in the next group.

2. *Cystitis* will, of course, produce an albuminuria. It is not very common, and when present is an indication to suspect a gonococcal infection, unless the patient is a multipara with chronic cervicitis, which is known not to be gonorrhœal.

Pyelitis is very much commoner than is suspected. Dodds[3] found bacilluria due to B. coli in 6 per cent. of pregnancies, and it varies very much in the intensity of its attack. Treatment is usually successful in a short space of time. In the milder type of case equally good results are obtained from alkalinization of the urine, or from intra-vesical mercurochrome. The pain and temperature subside rapidly, and it is not usual, though not very infrequent, for the attack to recur. In severe cases there is nothing to equal an indwelling ureteric catheter of large size. The effects are dramatic in cases where there is pyonephrosis as well as pyelitis. There need be no fear of leaving the

catheter in for several days. It should be gently syringed daily with 1 per cent. mercurochrome. Any case which does not respond to treatment in a reasonably short time should be X-rayed, as it is highly probable that a renal calculus will be discovered. This is so much the case that I consider failure to respond to treatment to be almost diagnostic of stone. Out of forty-two cases treated at the Royal Infirmary before 1926 there were two deaths, and in each case there was a large calculus and pyonephrosis. These two cases were early in the series and were not detected, as we had not realized the necessity for X-rays in cases which resist treatment, and they would almost certainly have been saved at the present time. Between 1926 and 1932 we treated eighty-one cases with no death and no induction of labour. With this line of treatment it should never be necessary to terminate a pregnancy for pyelitis, though the febrile and toxic condition of the mother occasionally causes death of the fœtus and abortion. The condition, unfortunately, tends to recur at subsequent pregnancies, and some permanent damage is done to kidney and ureter (Williams [4]).

3. *Cases of previous nephritis associated with pregnancy.*—This next group is the first of the "real albuminurias." They amount to about 30–35 per cent. of the cases. In many of the cases a history of previous nephritis, or of diseases such as scarlet fever, can be obtained. The prognosis as to the pregnancy is not good, since the association between abortion, or accidental hæmorrhage, and nephritis is so close. The prognosis for the patient is also none too good, even when the pregnancy is early. The renal

condition frequently tends to become exacerbated about the third or fourth month, and placental infarcts occur which may interfere with the fœtal development or cause abortion. In exacerbation the diagnosis is usually simple, for the history of previous nephritis is commonly volunteered by the patient. General weakness, headache, and mild visual disturbances are usually the first symptoms, and an increasing œdema is an early sign. The urine is frequently copious in quantity and of low specific gravity, with a moderate degree of albumin present.

Treatment consists in rest in bed, appropriate diet, and medical treatment, combined with careful observation for any signs of rapid deterioration. I attach much importance to the appearance of albuminuric retinitis, and also to a sudden and rapid decrease in the daily amount of urine excreted. These and other signs of approaching uræmia are an absolute indication for termination of the pregnancy. It is my very strong opinion that it is not the province of the obstetrician to make the final decision in these cases, but that the advice of an experienced physician should be obtained in all cases where the pregnant patient is known to have a pre-existing nephritis. To my mind the case should be regarded as one of nephritis complicated by pregnancy, and should therefore be under the care of an expert in kidney disease, with the obstetrician in the background to deal with obstetric complications. This procedure is carried out at our ante-natal clinic at the Bristol Royal Infirmary with most satisfactory results, all cases of nephritis being put under the care of one of the

physicians, who decides as to whether the pregnancy should proceed or be terminated, and keeps in touch with our department. Stieglitz[5] followed up fifty-three cases, and found that 80 per cent. were in a much worse condition three years after confinement, and each pregnancy increased the renal damage and arteriosclerotic changes.

4. *Pregnancy toxæmias.*—I include here the whole group of cases in which pregnant women exhibit "toxic" signs accompanied by albuminuria. These signs may point to a diagnosis of *true toxic pernicious vomiting, acute yellow atrophy of the liver, pre-eclampsia,* or *eclamptic* convulsions. Personally, I hold the view that these are protean manifestations of a pregnancy intoxication which affects all the organs in the body, with an especial predilection for the liver, kidney and brain.

This is not the occasion for a discussion on the pathology of these conditions, but I wish to point out that the liver is *always* affected, areas of hæmorrhages and focal necrosis being invariably present, and usually associated with albuminuria and a raised blood-pressure. In consequence of this generalized toxæmia the differential diagnosis from nephritis and pregnancy is not so difficult as it would appear at first sight.

A simple clinical test for diacetic acid and acetone (if positive) will strongly predispose to a diagnosis of pre-eclampsia, and is a routine in our ante-natal clinic in all cases of albuminuria. In pre-eclampsia the symptoms are very similar to those of pregnancy associated with severe nephritis: headache, nausea, giddy attacks, spots before the eyes are common at

the onset. Œdema of limbs and face is usually observed. If untreated there is almost always some degree of mental confusion and sometimes sudden loss of vision.

At the Infirmary we are accustomed to lay stress on two laboratory findings to clinch the diagnosis. First, the reading of the diastase reaction is always very high in toxic cases, sometimes well over 150, while it is as low as 20–30 units in most cases of chronic nephritis. Also, the ratio of the nitrogen excreted as ammonia to that excreted as urea is raised in toxæmia and not in incipient uræmia. I regard an ammonia-nitrogen excretion of 20 per cent. as a precursor of eclamptic convulsions.

It follows, then, that any case of albuminuria especially associated with the signs and symptoms detailed above should be at once investigated upon these lines. If the results suggest nephritis the patient should be referred to a physician for observation and treatment. If the results confirm a diagnosis of pre-eclampsia the case is primarily an obstetric matter and is treated as follows: Absolute rest in bed is essential. No food of any description is allowed by the mouth, except water and glucose, which may be given *ad libitum* or till glycosuria appears. (I have found that most pre-eclamptics will take 10–14 oz. daily of glucose without eliminating it in the urine.) Purgation by salines is carried out daily, and the blood-pressure taken and urine tested not only for albuminuria, but for ketones, and an estimation made of the ammonia-urea ratio. In most cases there is an immediate and rapid improvement, the œdema

decreases, the visual and mental disturbances lessen, and the urine increases in quantity, while the amount of albumin lessens and the blood-pressure falls. The patient is now allowed a mild carbohydrate diet. We usually begin with rusks, toast and honey or jam, and proceed to rice and potatoes. No fat or protein is allowed beyond the minimal quantities in the above dietary.

It cannot be too strongly stressed that milk is a most improper diet in these cases. It is seldom realized that one pint of milk contains almost an ounce of fat and also of protein, and very few would put a pre-eclamptic patient on a diet of an ounce of butter and the same amount of steak, yet a milk diet which far exceeds these quantities is very frequently ordered with disastrous results. The daily urine test and blood-pressure readings will show how the patient's liver is standing the increasing dietary, and in favourable cases, where food is gradually added, we prefer to allow proteins before fats. In an average case the patient is on a reasonably full diet in eight to ten days, and is then kept on a "low fat" diet, *i.e.* she is encouraged to take jam or syrup in preference to butter, and her milk is kept low, being given in tea and coffee, and not drunk neat.

In a certain number of cases the symptoms persist or even get worse, in spite of treatment. The blood-pressure rises and headache gets worse. If sudden blindness occurs it is of grave significance. These cases require immediate induction of labour, and I prefer the method of rupturing the membranes by a catheter. If the patient is in labour full "Rotunda"

or "Strogonoff" treatment should be instituted at once.

As this paper is intended to open a discussion upon albuminuria the detailed treatment of eclamptic convulsions lies outside its scope, and for the same reason the treatment of toxic vomiting and acute yellow atrophy is also omitted, as these are definite clinical entities of a nature which is quite obvious and more important than the mere symptomatic albuminuria.

5. The last group of cases comprises a rather mysterious clinical entity known as "low reserve kidney." I propose to leave this, in the greater part, to my medical colleague. I would draw attention to the fact that Whitridge Williams classified 35 per cent. of his albuminuria cases in this group.

The symptoms are general malaise and mild headache. The œdema is slight, if present at all, and the patient does not feel or seem really ill. The urine is fairly copious and the albumin small in amount. The blood-pressure is always raised, but rarely exceeds 160/90. As far as I can gather this group includes the cases which one cannot diagnose as definitely nephritic or pre-eclamptic, and so is a convenient label. Williams states that rest in bed and reduced diet cures practically all cases in one or two weeks, and states that permanent renal damage is rare. He regards these conditions as a mild toxæmia. Gibbens[6] classifies these as 10 per cent. obvious nephritis, and 50 per cent. occult nephritis, which only shows itself during pregnancy; while a recent paper by Browne[7] shows that chronic renal

damage may exist between pregnancies without giving any signs at all, and he considers that this accounts for many cases described as "low reserve kidney."

REFERENCES.

[1] *Jour. Urol.*, 1928, xx. 413.
[2] *Jour. Obstet. and Gyn.*, 1931, xxxviii. 516.
[3] *Ibid*, 1931, xxxviii. 773.
[4] *Obstetrics*, 1927, p. 605.
[5] *Amer. Jour. Obstet. and Gyn.*, 1931, xxi. 26.
[6] *Lancet*, 1931, ii. 12.
[7] *Jour. Obstet. and Gyn.*, 1930, xxxvii. 476–482.

ALBUMINURIA IN PREGNANCY.*

BY

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DR. STATHAM'S account of albuminuria in pregnancy from the obstetrician's point of view is admirable and clearly intelligible, and he has handled the problems of treatment in such a practical fashion as to leave very little for the physician to add on this aspect. In fact, the position is this: that in all cases where a pregnant patient is known to have a pre-existing nephritis Dr. Statham leaves it to a physician to decide whether the pregnancy should proceed or be terminated. Furthermore, in a certain number of cases the obstetrician, feeling uncertain as to whether the case is one of pre-eclamptic albuminuria or nephritis, the pathologist and the physician are invited to help in the decision.

Dr. Statham speaks of a group of cases in which albuminuria has no pathological significance, but he is doubtful whether there really is any such group. As he wisely observes, these cases should be carefully investigated before deciding that the albuminuria is of no significance. He continues to say that the condition calls for careful observation during pregnancy, though it is seldom associated with any real pathological symptoms. There are two important

* Paper opening a discussion at a meeting of the Bath, Bristol and Somerset Branch of the British Medical Association held on 25th May, 1932.

reservations in this last remark: one is implied in the "careful investigation," and we may have noticed that careful investigation brings down the proportion of cases in which the albuminuria was of no pathological significance to a very low figure. The second reservation was that they seldom produce any real pathological symptoms. A word of warning is necessary here: I think that though no pathological symptoms may be associated with a mild albuminuria it is impossible to feel quite sure that no damage will result therefrom in after years.

Dr. Statham says that it is interesting to note that there are definite but slight changes in the urinary tract during every normal pregnancy. The slight changes in the renal parenchyma have been given the name of "pregnancy kidney."

Many authors speak of the strain of pregnancy upon the kidneys, and Dr. Statham, in conversation with me, has asked, has almost challenged me, to define what is meant by "the strain of pregnancy." In normal pregnancy there are definite changes in the maternal metabolism; there must be, for example, some retention of nitrogen for the development of the fœtus. There is a marked gain in the mother's weight due to growth of the uterus, increase in the size of the breasts and, in many instances, increase in the mother's weight from storage of fat. The maternal organs have also to detoxicate and excrete certain metabolic products arising from the fœtus; it is true that these are physiological changes and the extra burden increases by very slow degrees, but nobody would dispute, least of all no woman who has had experience of pregnancy, that the extra burden upon the entire system is distinctly perceptible before the pregnancy has come to full term. The extra burden falls chiefly,

no matter how or why, upon the liver and kidneys. It has been suggested by Weichardt[1] that the damage is done, at least to the liver, by the absorption into the general circulation of toxins of enzyme nature derived from the action of certain cells of the ovum, the syncytium.

It has been claimed there is a specific change in the liver during pregnancy, evidenced by a mild degree of fatty degeneration of the cells about the centre of the lobules interfering with the glycogenic function. Von Leyden[2] demonstrated a similar condition of the kidneys; the lesion consists of a slight degree of fatty degeneration of the tubules, not infrequently accompanied by albuminuria. If these observations are not erroneous, I think it must be allowed that the effects of the abnormal strain in pregnancy have been proved to exist. The causes are more difficult to define, but Gibberd has summed the matter up when he says that "pregnancy is the most delicate test of renal efficiency." I do not think that he means that the test is not a very heavy one.

Whitridge Williams[3] speaks of a "low reserve kidney," by which he means that some women have slightly defective kidneys which are efficient under ordinary conditions but break down under the strain of pregnancy. I have often wondered if this defect is, in fact, only a slight one. You all remember how much of two healthy kidneys has to be removed before the kidneys show any impairment of function. Some observers go so far as to say that three-quarters of the total kidney substance must be destroyed before, for instance, nitrogen retention occurs. It is safer, I believe, to assume that the differences between what Whitridge Williams calls "ordinary conditions" and the conditions of pregnancy are so

great that the strain of pregnancy must indeed be immense. Alternatively it must be held that the kidneys do not show themselves to be even slightly defective until they are on the point of breaking down under a very moderate strain. The recovery of these women and their continuance in good health with kidneys that are functionally unimpaired suggests that it is the strain of pregnancy that is great rather than the renal defect that develops under a slight strain.

One of the most difficult problems is to decide whether, when an albuminuria is discovered in pregnancy, it is safe to allow the pregnancy to proceed. Dr. Statham speaks of cases of previous nephritis associated with pregnancy, and I think that he has dealt with this group, but it is much more difficult when the pregnant patient is not known to have a pre-existing nephritis. Fortunately, it does not matter in the least so far as the conduct of the existing pregnancy is concerned.

Whitridge Williams's rules are a safe guide to procedure: "When symptoms of renal insufficiency appear before the child is viable they are almost invariably due to nephritic toxæmia; the earlier they appear the more certainly this is true. After the seventh month it is usually impossible to distinguish by ordinary clinical means between nephritic and pre-eclamptic toxæmia."

Many toxæmic patients diagnosed as pre-eclamptic are really nephritic, especially those women who habitually give birth to premature infants. They remain perfectly well until at a certain period in the pregnancy, very often about the same month, œdema and albuminuria suddenly develop. These cases are nearly always nephritic. For it should be noted that

hepatic, pre-eclamptic or eclamptic toxæmia are commonest in first pregnancies, and that the prognosis for subsequent pregnancies is good, or, as Whitridge Williams says, "one attack of pre-eclampsia or eclampsia confers a relative immunity." Therefore toxæmia in repeated pregnancies may be taken as evidence of chronic nephritis.

Here a digression may be permitted to utter a warning against confusing chronic nephritis with syphilis as a cause of repeated miscarriage. Chronic nephritis ranks second to syphilis amongst the causes of intra-uterine death, but whereas fœtal deaths due to nephritis will occur as a rule towards the same time in successive pregnancies, the virulence of the syphilitic poison on the embryo will be found to diminish in successive pregnancies in accordance with Diday's[4] law of habitual decrease, which I give in his own words: "On examination of the cases in which syphilitic parents have had many children in succession . . . the disease affected the earliest most severely and became ameliorated afterwards in proportion as its victims were multiplied. In the first pregnancy abortion occurs in the fifth month, in the second at a later period. The result of the third is a child at full term but weakly and not viable, the fourth child is born with a constitution more capable of resistance."

When albuminuria occurs in the first pregnancy, it is not of much moment to try and distinguish between nephritis and pre-eclampsia; the treatment is identical and Dr. Statham has described it, and he concludes by saying that in most cases there is an immediate and rapid improvement, in which case the pregnancy is allowed to continue. In a certain number of cases he says the symptoms persist or even get worse in

spite of the treatment, and it becomes necessary to terminate the pregnancy. If the albuminuria continues without clinical symptoms the pregnancy is allowed to proceed. In cases of albuminuria with headache, vomiting, œdema, etc., the rules for terminating the pregnancy are perhaps easier to define than the rules for differentiating nephritic from pre-eclamptic toxæmia. Marked nitrogen retention occurs in cases of pregnancy with chronic nephritis, and may or may not occur before the onset of eclampsia. It is a safe rule to terminate the pregnancy as soon as the blood-urea and non-protein nitrogen content rise above 40 mgms. per 100 c.c.

Dr. Statham mentions two laboratory tests which have proved of great value to him in clinching the diagnosis of pre-eclampsia, namely the diastase reaction which he tells us is always very high in eclampsia and pre-eclampsia, but reduced in most cases of chronic nephritis. I don't believe it matters a bit to know the diastase content in a nephritic case; the decision to terminate the pregnancy will not depend upon the diastase concentration. I think Stafford and Addis[5] are right in saying the determinations of the diastase content of the blood or urine of pregnancy with Bright's disease have no clinical value. By this I do not mean to question the clinical importance of the very high concentration of urinary diastase, which Dr. Statham says gives such valuable warning in pre-eclamptic states.

His second test was the ammonia-nitrogen : urea ratio, which always rises when the chief lesion is in the liver. But it should be emphasized that no obstetrician will refrain from terminating a pregnancy because the diastase concentration and the ammonia-nitrogen : urea ratio are within normal limits, provided

that there is evidence of high nitrogen retention; and as McLean and de Wesselow[6] pointed out in 1918, no clinical information is obtained by the estimation of non-protein nitrogen in the blood which is not furnished by the simpler plan of estimating the blood-urea alone. The pregnancy should be terminated if the blood-urea rises above 40 mgms., whether the case is one of nephritic or pre-eclamptic toxæmia.

The physician's most difficult task comes when the woman has been delivered, his task of deciding whether the albuminuria bespeaks a permanently damaged kidney. If the albuminuria was pre-eclamptic in origin the prognosis for both mother and child in subsequent pregnancies is good. It is bad for both if nephritis exists. If all trace of albumen and casts disappear and the blood-pressure falls to normal by the second or third week after delivery the case may be classified as pre-eclampsia, not of course with absolute certainty, but still with sufficient probability to permit the risk of another pregnancy. If the albumin and casts persist at the end of a month the case is probably one of nephritis. Sometimes there is an interval of six months to a year, and then, though no pregnancy intervenes, signs of definite nephritis reappear. In all cases, however, the state of the arteries and the blood-pressure will give valuable information. The presence of any degree of arterio-sclerosis and raised systolic and, in particular, diastolic pressures may be taken as proof of permanent renal damage. The most difficult case of all is that in which all signs and symptoms of nephritis are absent until the woman again becomes pregnant, and then after a few months all the old symptoms reappear.

So we have three classes :—

(*a*) Those in which the toxæmia was eclamptic. These may safely run the risk of another pregnancy.

(*b*) Those in which chronic nephritis can definitely be shown to be present. These cases should not be permitted to run the risk of another pregnancy.

(*c*) Those in which all signs of nephritis remained in abeyance until another pregnancy supervened. In such cases it must be borne in mind that each successive pregnancy becomes more dangerous to the mother, that the progress of her nephritis will be advanced, and that the chances of the child surviving become progressively poorer. Therefore the woman should be warned of the serious danger of repeated pregnancies. Should she again become pregnant the advisability of performing Cæsarean section if the pregnancy continues until the child becomes viable must be discussed, and the possibility of undergoing prophylactic sterilization must be offered to her.

REFERENCES.

[1] Weichardt, in Llewellys Barker's *Endocrinology and Metabolism*, iv. 835.

[2] Von Leyden, *ibid.*

[3] Whitridge Williams, *Obstetrics*. Fifth Edition, *passim*. New York, 1927.

[4] Diday, *Infantile Syphilis*, p. 113, New Sydenham Society, 1859.

[5] Stafford and Addis, *Quart. Jour. Med.*, 1924, xvii. 151.

[6] McLean and De Wesselow, *Quart. Jour. Med.*, 1918–19, xii. 347.

NOTES ON FEMALE CIRCUMCISION AS PRACTISED BY THE AMERU.

BY

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THE Ameru are a tribe inhabiting the northern part of the Kikuyu Province of Kenya Colony. The area of this part of Kikuyu, called Meru, is 3,500 square miles, and has about 110,000 inhabitants. The southern boundary of this district is within about thirty miles north of the Equator, and the northern boundary is about eighty miles north. The Ameru are a very primitive people, and are making a last effort to conserve ancient customs, be they good, bad or indifferent.

At the present moment they are making a determined effort to conserve the custom of female circumcision. This custom is universal amongst certain of the Bantu tribes, to which the Ameru belong, yet no basis for the custom has been found. The Church of Scotland Mission at Kikuyu suggest that the custom is comparable to that of the Nubians of sewing up the vulva when a woman becomes pregnant or her husband leaves the home to seek work at some distant spot, and ensures the fidelity of the woman. A superficial examination of this theory is enough to kill it, because until recent years there was no marital infidelity on the part of the women. One reason for the retention of the rite is the belief that it increases fertility on the part of the woman. The main point, with which these people are concerned now,

is that it is an essential to the entrance of women into full tribal membership. Should a child be born to an uncircumcised woman, neither she nor the child can claim a single tribal privilege, and should any children be born to this woman after circumcision and marriage they will die on account of the child born prior to the rite of circumcision. That this can happen is proved by the fact that there is a man in Government employ who was born while his mother was still uncircumcised. After circumcision she was married and gave birth to four more children, all of whom are dead from this form of suggestion. The man is known to myself, so that I can vouch for the truthfulness of the history.

The fact that no child of an uncircumcised woman can enter into tribal rights has led to the almost universal practice of abortion. This is due to the fact that when a man's daughter reaches a certain age he announces the fact, and she is then at liberty to be taken by a warrior as his mistress without any obligation to marriage. Should she become pregnant by this lover, he must give the father a goat or sheep, but the seriousness of this pregnancy arises from the fact that unless the woman is circumcised the child will be an outcast. To prevent this the woman takes an abortifacient, or the warrior may exert pressure over the womb with a view to causing the expulsion of the fœtus. Until recently it was not unknown for the man to give the woman a sharp blow over the womb, and this often led to her death.

When a girl is sought in marriage the man has to pay the father of the girl a certain number of cattle, sheep or goats, and at some time prior to the completion of the purchase the girl has to be circumcised. A day for the ceremony is fixed, and the woman who will perform the operation is given a price for it. In this

district the circumciser receives a goat's skin worth about two shillings, some food to the value of about sixpence and a few beads bought at the nearest Indian shop. About forty-eight hours before she is due to be circumcised the girl rubs herself liberally with castor oil until her whole body appears to have been black-leaded. She then adorns herself with a striking headdress, brass wire armlets and leglets, and on her knees she fixes some metal containing iron balls to make a noise as she walks. In her hand she carries the end of a cow's tail, and round her middle she has a narrow fringe of leather. She then sets out on parade, and at intervals she stops to dance and sing. The dancing consists of swaying on her toes and pushing the abdomen backwards and forwards. This goes on until just before the ceremony, by which time she is really excited and tired. She now receives the second bath of her life, the first being four days after birth. After this ceremonial washing at a convenient stream she is led by the older women, who are adorned with shields and swords or sticks, to the place of the ceremony, where she will be met by a large crowd of females of all ages. During all this there is continuous dancing and singing. At or near 4 p.m. the girl is stripped naked except for a string of beads round her middle, and after a few minor rites takes her place within a small circle of women, one of whom will support her back as she sits on the ground with legs abducted. The operator, a dirty woman with a dirtier knife, now approaches and makes a cut which removes the clitoris and the whole of the labia minora. As the cut is being made the entire host of females utters a yell to drown the cry of the one who is being cut. After this the girl is draped in a dirty black cowhide and escorted to a dark and dirty hut, still

bleeding profusely, and here she stays for about a month with the one who supported her during the operation. During her stay in this hut she receives instruction in the tribal rites and laws and also marriage obligations. After the wound has healed she can then be taken by her husband.

Sometimes it happens that the operator is over zealous and then she may cut into the vault of the vagina. In illustration of this I may mention the case of a woman of between 25 and 30 years of age who came to me on account of constant dribbling of the urine from the vagina. When I examined her I found that it was with great difficulty that one finger could be passed into the vagina. The reason for this was a circular band of dense fibrous tissue about one inch deep where the labia minora should have been. In addition I found that there was a similar band of hard fibrous tissue in the vault, and this surrounded a hole leading into the bladder. This woman thought that a dose of medicine would cure her trouble, and she refused any radical treatment. She was, I found out later, a prostitute, and whenever she became pregnant resorted to abortifacients. I saw another woman about the same age just after labour had terminated and found that she had a fairly large perineal tear. On examining her more carefully I found that in place of the labia minora there was a very well marked and sharp band of fibrous tissue. She refused to have the tear sutured, and when last I heard of her the wound had healed satisfactorily. In the case of breach presentation labour is long and tedious, even when the fibrous band is thin. I have had two such cases ; fortunately, each labour terminated with a living child, but the second one was " touch and go " after a very distressing labour.

I have made no comments on this practice, but have tried to give some sort of picture which, I hope, is clear enough to convey to any who may read these simple notes some of the burden of the women of this tribe. Strange to relate, it is they and not the men who are the strongest protagonists of this horrible and mutilating custom. It remains only to be said that at the beginning of this year the local native council decreed that only certificated circumcisers should perform the operation, and that the operation be limited to clitoridectomy.

THE BRITISH PHARMACOPŒIA, 1932.*

BY

A. L. TAYLOR, M.P.S.,
Pharmacist, Royal Infirmary, Bristol.

THE publication of a new *British Pharmacopœia* and its adoption as the official formulary always means some trouble for medical men and pharmacists alike. The difficulties are likely to be intensified in the case of this, the sixth edition, for two reasons: first, the fact that the book is not available for use until the end of September, although it becomes official on the 1st October; secondly, in that it embodies many more changes in form, size, and matter than in the case of any preceding edition—*e.g.* 358 articles are omitted that were in the 1914 B.P. and 128 included that were not. In 113 cases the name of the article has been altered from that of the 1914 B.P. In thirty-six cases the composition of the article has been altered from its predecessor, and in thirteen the strength of the article has been altered.

The omissions will perhaps arouse the greatest surprise, and at first sight possible dissatisfaction, when it is realized that the following old favourites of the prescriber no longer appear in the B.P.:—

Acetanilide.
Acid. Nitrohydrochlor. dil.
Aq. Laurocerasi.
Benzamine Lact.
Bismuth. Subnit.
Butyl Chloral Hyd.
Caffein. Citrat.
Decoct. Aloes Co.
Ext. Grindel. Liq.
Ext. Hydrast. Liq.
Hyd. Oxid. Rub.
Inf. Rosae Acid.
Inj. Morphin. Hypoderm.
Inj. Strychninae.
Inj. Apomorphinae.
Inj. Ergotae.
Liq. Bismuth et Ammon. Cit.

* Constable & Co., Ltd. Price 21s. 31s. with wide margins.

Mist. Cretæ.
Mist. Ferri Co.
Pil. Coloc. Co.
Pil. Ipecac. *c* Scill.
Pil. Saponis Co.
Pulv. Kino Co.
Salol.
Spirit. Armorac. Co.
Tinct. Cannab. Ind.
Tinct. Chlorof. et Morph. Co.
Tinct. Gelsemü.
Tinct. Opii Ammon.
Troch. Pot. Chlorat.
Ung. Gall. *c* Opio.
Vin. Ipecac. etc., etc.

The prescriber will doubtless be relieved to discover that, by mutual arrangement with the Committee of the "British Pharmaceutical Codex," the new edition of this work now approaching completion will contain most of these discards from the B.P.

The changes in the new book appear to be largely based on principle; *e.g. all the vina or wines* have gone, in accordance with the international agreement "that no potent drug shall be prepared in the form of a medicinal wine." This has, of course, meant the scrapping of *vinum ipecacuanhæ*, which, however, reappears under the name of *tinct. ipecacuanhæ*.

All the old hypodermic injections have gone, doubtless on the assumption that the prescriber will prefer to use the more convenient hypodermic tablet of the particular strength needed.

A very large number of drugs, extracts, liquors, spirits and tinctures have been deleted, and in this connection a paragraph on page xx of the Introduction may be quoted as indicating the principles actuating the Pharmacopœia Commission, the compilers of the B.P. "In selecting the drugs to be included in the Pharmacopœia, the Commission has been guided by a desire to include only those substances which are of sufficient medicinal value to justify the continuance of their use by prescribers. *The mere fact that a drug is frequently prescribed has not been considered a sufficient justification for its inclusion.*" The italics are the reviewer's.

If, however, the list of omissions is long and remarkable, the additions to the 1932 B.P. are equally notable, as representing a desire to make the official formulary representative of modern ideas of medication and treatment. Among the more important may be noticed :—

Acid. Trichloracetic.
Acriflavine.
Agar-Agar.
Amidopyrin.
Amylocaine.
Cataplasma Kaolin.
Chloramine.
Chlorbutol.
Ephedrine Hydrochloride.
Ergotoxine Ethanesulphonate.
Erythrilis Tetanitras Dil.
Ext. Colch. Liq.

Ext. Hepat. Liq.
Ext. Hepat. Sicc.
} The making of these two extracts official will fix a very necessary standard, and will tend to discourage the prescribing of a large number of preparations under fancy or proprietary names of unknown composition.

Ext. Pituitarii Liq.
Ext. Malt.
Ext. Malt. *c* Morrhuo.
Gelatin Zinc (Unna's Paste).
Ichthammol (Ichthyol).
Indicarmine (Indigo Carmine).
Infusa Recentia (*fresh* infusions).
Infusa Concentrata.

Concentrated infusions will always be used, it is to be feared, by doctor and chemist alike, and if so it is desirable to regularize their composition in the B.P.—*vide* page 9. In this connection it should be emphasized that if a prescriber wishes to have a fresh infusion used in his mixtures he *must* order "Inf. — *recent.*" If he does not do this the new official concentrated infusion may be used. This is an excellent innovation.

Insulin.
Liq. Ammon. Acet. Fort.
Liq. Ergosterol. Irrad.—Representing the first official recognition of the present enthusiasm for vitamine medication.
Liq. Iodi Fort.
Liq. Iodi Mitis.
} Replacing the tinctures of the 1914 B.P.
Liq. Iodi Simplex.—Corresponding very closely with the old French Codex preparation, which, curiously enough, has been omitted from the new French Codex.
Neoarsphenamina.—The first of the organic arsenic preparations in the B.P.
Syr. Ferri. Phosph. Co.—"Parrish's."
Theophyllin Sod. Acet.

Official recognition of the use of gas is seen by the inclusion of :—

Aethylene,
Carbon Dioxide,
Nitrogen Monoxide,
Oxygen,
Aethyl Chloride,

and of serum therapy by that of :—

Diphtheria
Tetanus.
Gas Gangrene. } Antitoxins.
(Schick Test Toxin). Toxin Diphther. Diagnostic.
Schick Control Toxin Diphther. Calefact.
Toxin Diphther. Detoxicat.
Tuberculins.
Vaccines.—T.A.B.
Vaccines.—Lymph.

The changes in form and substance of the monographs dealing with drugs and preparations represent, perhaps, the greatest advance in the B.P. The arrangements of sub-headings under characters :—

Tests for identity,
Tests for purity,
Assay,
Storage,
Sterilization,

bring the book well up to the most modern standards ; *vide* pages 8–11.

Biological assays of the following are included :—

(1) Antirachitic Vitamin D.
(2) Anti-dysentery Serum (Shiga).
(3) Diphtheria Antitoxin.
(4) Gas Gangrene Antitoxin.
(5) Tetanus Antitoxin.
(6) Insulin.
(7) Old Tuberculin.
(8) Pituitary (posterior) Ext.
(9) Digitalis.
(10) Strophanthin.
(11) Neoarsphenamine.
(12) Sulpharsphenamine.

Directions as to storage and sterilization are particularly desirable innovations.

The Appendices, twenty-one in number, may be regarded as a great advance on the 1914 B.P. in that they deal with :—

Determination of pH values.—Appendix iii includes a very useful and well-arranged table of indicators and their colour changes.

Antimony trichloride test for cod liver oil (Appendix xiv).

Special processes used in preparing solutions for injection (Appendix xvi) with especial reference to methods of sterilizing and tests for limit of alkalinity of glass.

Tests for freedom from living gas-producing organisms, anaerobic organisms, and undue toxicity.

The exclusive use of the metric system of weights and measures for formulae has been retained and doses are still given in metric and English systems. In this connection the amended doses of

Tinct. Belladonnæ.
Tinct. Digitalis.
Tinct. Nuc. Vom.

should be noted.

Certain changes in nomenclature must be noted, especially as in some cases there are also changes in composition :—

B.P. 1914.	*becomes*	B.P. 1932.
Aether. Purif.		Aether. Anaesthet.
Emp. Resini.		Emp. Colophonii.
Liq. Trinitrini.		Liq. Trinitratis.
Pulv. Ipecac. Co. (Dover's Powder).		Pulv. Ipecac. et Opii.
Tinct. Camph. Co.		Tinct. Camphorata.
Tinct. Iodi Fort.		Liq. Iodi Fort.
Tinct. Iodi Mit.		Liq. Iodi Mit.

It is, perhaps, to be regretted that the date of the new B.P. coming into official use (1st October, 1932) should coincide so closely with the date on which it becomes available for purchase, but doubtless a wise latitude by prescribers and the authorities responsible for the administration of the Food and Drugs Act will be exercised, so that the transition from B.P. 1914 to B.P. 1932 may be made without undue difficulty.

Reviews of Books

Choosing a Wife and Other Essays. By E. G. Dru Drury, M.D. Pp. viii, 279. London: H. K. Lewis & Co. Ltd. 1932. Price 8s. 6d.—This is a collection of three groups of papers and addresses delivered in South Africa to medical students, nurses and fellow-practitioners respectively. The subjects are varied and none of the discourses are very technical. For the most part they make pleasant reading—highly entertaining in the case of many, especially the student group. Although the addresses to the nurses are more or less educational, the author introduces into most of the other essays a surprising number of facts, anatomical, genetic, physiological and clinical, which appear as similes or examples in the philosophy he unfolds. Two of the addresses, "Grahamstown Hospitals" and "Medical Trades Unionism," afford glimpses of local history. The latter, dated 1906, is of some interest in view of the subsequent events in South African medical politics. The style throughout is interesting. In places one seems to be reading whole paragraphs of pithy aphorisms which, however, do not pall, and homely examples, among which the motor-car frequently figures, are often used in a telling way to drive a point home. One might wish for such a teacher.

A Guide to General Practice. By A. H. Douthwaite, M.D. Pp. viii, 96. London: H. K. Lewis & Co. Ltd. 1932. Price 4s. 6d.—The author is to be congratulated on having produced in so small a space and in so readable a manner so much information, advice and warning. In five years' experience of general practice he has obtained an insight into life, as a doctor encounters it, that might have been expected in forty years, and in general it is a view with which probably most medical men of much experience will agree. The reader should begin with the first two paragraphs of "Conclusion," otherwise he may get an impression that the author has struck an unusually bad patch. It is a book that should be studied carefully by every man starting practice, as a valuable education that otherwise he could only get by

hard experience; it should save him much unhappiness; and it may be read with enjoyment by older men as a humorous, if sometimes cynical, reminiscence. There is a paragraph on vampire-like parents that deals, perhaps a little hardly, with a subject that must have caused most men anxiety, and opens up a question of considerable social importance that wants more consideration than it has received. We read with interest and agreement his remarks on the gullibility of the educated classes.

Methods and Objective of Medical Education. Part II of a Report to the Government of Victoria on the Hospital Medical School Problems of the State of Victoria. By R. J. A. BERRY, M.D., F.R.C.S., F.R.S. Published by the Government of Victoria. 1929.—Professor Berry was appointed by the Government of Victoria to visit the hospitals and medical schools of the United States, Canada, and England, and this is one of several most interesting and valuable reports that he made. It might well be called "Through the Schools with a Seeing Eye." At the present moment, when the question of Medical Education is so much to the fore, this memorandum is particularly valuable. As a professor of anatomy and dean of a medical school, the writer speaks with authority. With his well known insight and logical method, and a pleasant touch of humour, he describes, discusses and contrasts the educational systems of the United States, Canada and Britain. He has much of practical interest to say on preliminary study, selection of students, training for specialist versus training for general practitioner. He discusses the value of lectures, the means and methods of research, which seem to be unlimited in the States. He has an open mind on most questions, and says that we have much to learn from America, especially in its method of administration, which is much superior to ours. The Report is one that should be read by everyone interested in the question, and it is to be hoped that copies may be available, though it was published in Melbourne three years ago.

Baillière's Synthetic Anatomy. By J. E. CHEESMAN. 156 plates. London: Baillière, Tindall & Cox. 1932. Price 42s.—This work consists of a series of superimposed anatomical plates, so arranged that the part in use can be built up, and also dissected, by placing or displacing transparent constituent sheets one on the top of the others. While this method of study may not appeal to many, and will certainly in no way

replace the study of Anatomy by more orthodox methods, in lecture-room and dissecting-room, it may well be that it will be found useful for revision and for self-examination. For those to whom this method appeals, nothing more suitable than these plates can be imagined. They are clearly drawn and anatomically accurate, and although the method of study is apt to be confusing on first acquaintance, it tends to grow on one as its advantages are appreciated in use. The series under review can be cordially commended to those for whom it has been designed.

Cancer : Civilization : Degeneration. By J. COPE. Pp. xvii, 293. Illustrated. London : H. K. Lewis & Co. Ltd. 1932. Price 15s.—This is another of those tedious sermons on the text "Back to Nature." The author claims to be a medical man employing a *nom de plume* for *ethical* reasons. It is difficult to believe that he has any clinical acquaintance with cancer : his object is "to make your flesh creep," and for this purpose he supports his *ex parte* statements by quotations from any and every source, without reference or context. The book abounds in such gambits as "many leading authorities consider," "there is an ever increasing conviction that," "all the evidence tends to show," whatever "fact" may be necessary for the argument of the moment. Appeal is manifestly to the ignorant and credulous, fortified with statistics from the Registrar's returns and seasoned with the philosophy of Freud. To illustrate racial degeneration we are shown the figures for physical fitness of *civilians of military age in* 1918 ! The predisposing causes of cancer are race degeneration, constipation, modern food (preserved, "prepared," lacking in roughage), indolence and luxury, avoidance or limitation of child-birth and nursing : even more than the effeminate man the author dislikes the sporting woman, unsexed, perverted, physically unattractive. He has not noticed that the "boyish" figure ceased to be worn even earlier than the ultra-short skirt, and forgets that his Golden Epoch at Athens produced, among other glories, "The Suffragettes." The exciting cause of cancer may be a blow, exposure to rays (including sunlight—but why not "wireless"?), finger rings, inhalation of petrol fumes, the toxin of influenza, alcohol "the toxin of the yeast bacillus," etc. The book is illustrated by a considerable number of rather crude pen and ink sketches : the author should learn anatomy before offering instruction in that subject. Despite a few misprints ("cararrh") the typography is worthy of a better theme.

Plastic Surgery of the Nose, Ear and Face. By VICTOR FRÜHWALD. Pp. viii, 86. Illustrated. Vienna: Wilhelm Maudrich. 1932. Price $4.—The object of this book is to refresh the memory of those who have attended the author's clinic in Vienna. He points out that "to acquire a knowledge of plastic surgery from this book is not possible," and one can only commend the good sense of this pronouncement. The subjects discussed are nasal plastic repair, minor aural deformities, removal of wrinkles, "face-lifting," etc. The very limited class for whom the book is designed will perhaps tolerate the irritating foreign constructions, etc., and, of course, will not expect the work of any English or French surgeons to be acknowledged. The illustrations are numerous and include many pictures of quite ordinary knives, chisels, etc. Some of them are incomprehensible (except, we suppose, to the chosen few).

A Practice of Medicine. By A. STRÜMPELL AND E. SEYFARTH. Translated from the Thirtieth German Edition by Marshall & Ottley. London: Baillière, Tindall & Cox. 1931. 3 volumes. Price £5 5s.—With the exception of infectious diseases and diseases of metabolism the classification employed in this book is mainly anatomical, and in the index main and sub-headings are used with advantage. A good alphabetical index is also included in the third volume. The first section of the first volume is devoted to infectious diseases. Special mention in this section must be made of the excellent coloured plates and of the pulse and temperature charts typical of each disease, which should prove of practical assistance. It is, however, a little surprising to find leprosy included as an "acute infectious disease." The remainder of this volume deals comprehensively with diseases of the respiratory and circulatory systems and includes many well-reproduced radiograms. Exception might be taken to the statement on page 704 that "puncture of the pericardium is less dangerous than might be feared. Experience has shown that even if the heart itself is wounded serious consequences scarcely ever occur." It is also unfortunate that the drugs advised and discussed at length are often in unfamiliar form Diseases of the digestive and urinary systems are considered in the first three-quarters of the second volume. These sections are so well written that one hesitates to call attention to certain omissions. On page 918 "constipation" is given as one of the essential signs of acute appendicitis, whereat she increase in pulse rate is not mentioned. "Acute necrosis of

the pancreas" is differentiated from "acute pancreatitis," but no reference is made to cyanosis in either. A short consideration of abdominal actinomycosis might have been added for the sake of completeness. The remainder of this volume deals with diseases of the organs of motion and of metabolism. The section on blood diseases also deserves special mention, although the existence of acute lymphatic leukæmia as a pathological entity may still be doubted by a few authorities. The last volume deals at length with diseases of the central nervous system, and this is the best section in the book. We have nothing but praise for the arrangement, and such lists as the segmental supply of muscles and the action and nerve supply of muscles should prove very useful to the busy practitioner. There are two appendices: the first a "summary of the more important poisons," and the second "a few useful prescriptions." A short review of so large a text-book must necessarily be incomplete, but after a study of this book, we can confidently recommend it to general practitioners. It is clearly printed on good paper and reads easily. Dr. Marshall and Miss Ottley are to be congratulated on their translation.

Editorial Note

The Sheriff of Bristol.

DR. W. KENNETH WILLS has accepted the office of Sheriff for the coming year, and recalling the admirable manner in which he discharged the duties of President of the Bristol Medico-Chirurgical Society in 1927-8 there is no doubt that the City of Bristol has made a most happy choice. It is many years since a medical man held this important civic office, the late Mr. Richardson Cross having been Sheriff in 1898.

H. A. Bruno

Obituary

HENRY LAWRENCE ORMEROD, M.D., B.Ch., R.U.I.

We deeply regret to record the death of Dr. Henry Lawrence Ormerod, which occurred suddenly on 27th July, 1932. Dr. Ormerod was born in 1867 at Westbury-on-Trym, the eldest son of Henry Ormerod, surgeon for forty years at Westbury-on-Trym, and grandson of William Ormerod, surgeon, of Portland Square, Bristol. He was educated at Bristol Grammar School and won a scholarship at the Bristol Medical School and Bristol Royal Infirmary, where he gained the Suple Gold Medals for Surgery in 1888 and for Medicine in 1889. He obtained the diplomas of M.R.C.S. and L.R.C.P. London, in 1889, and soon after held the post of Junior House Surgeon and House Physician to the Bristol Royal Infirmary. In these offices he gave evidence of much ability and acumen, and his success in life was largely due to the thoroughness and assiduous attention with which he approached his early training. He started general practice at Westbury-on-Trym in 1895, and in order to qualify himself fully in this capacity he proceeded to the degrees of M.B., B.Ch., B.A.O. of the Royal University of Ireland in 1893 and M.D. in 1896.

In 1900 he married Marion Grace, eldest daughter of the late Canon Alford, of Bristol Cathedral.

Like his father before him, he possessed considerable powers of diagnosis, and was full of resource in the symptomatic treatment of disease which forms so important a part of the work of the family practitioner. Dr. Ormerod combined a sound professional knowledge with a gentle and equable disposition which gave composure to his patients and secured him many friends. The wisdom and fairness of his judgments gained for him the confidence of his colleagues, by whom he was regarded as an ideal family doctor.

His war service at Mr. R. E. Bush's hospital at Bishop's Knoll was an outstanding example of devoted effort unsparingly given, wholly unpaid and completely unrecognized by the War Office.

His medical appointments included :—

District Medical Officer and Public Vaccinator, Thornbury.
Medical Officer to the Post Office at Westbury-on-Trym.
Honorary Surgeon to the Bristol Eye Dispensary.
Certifying Factory Surgeon, and
Medical Officer at Brentry Colony.

Our Society showed its appreciation of his worth by making him President for 1928–29, and he was Chairman of the Bristol Division of the B.M.A. in 1927.

Ormerod was, in addition, one of the staunchest laymen in the Church of England. He was Chairman of the Cathedral Branch of the C.E.M.S., and Secretary of the Medical Service held annually in Bristol Cathedral. His personal views on the co-operation between the parson and the doctor may be illustrated by a resolution which he drafted not long before his death, for the Clerical and Medical Committee set up by the Bishop of Bristol : "Although from the strictly scientific point of view we have found no evidence of any cases of healing which cannot be paralleled by similar cures wrought by psycho-therapy without religion, and by instances of spontaneous healing which occur even in the gravest cases in ordinary medical practice, the Committee welcomes the co-operation between clergy and doctors, as by Religious Ministration the mental and moral outlook of the patient may be much improved and thereby the bodily power be greatly strengthened in its fight against disease."

He leaves a widow and two sons, to whom we extend our sympathy. His elder son, Dr. G. L. Ormerod, is continuing the practice at Westbury, thus maintaining the family tradition to the fourth generation.

FREDERICK GRAHAM LILLEY, L.D.S., R.C.S.

WITHIN a short time of his appointment to the office of Dental House Surgeon at the Bristol General Hospital, Mr. F. G. Lilley was attacked by a virulent form of pneumonia, and died on 30th September after an illness lasting two days.

Both as a student and during his short tenure of office Mr. Lilley showed exceptional promise, combining sound professional knowledge with a charming personality. He was the only son of Dr. and Mrs. Frederick Lilley, of Weston-super-Mare.

The Medical Library of the University of Bristol,

WITH WHICH IS INCORPORATED

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the list in June, 1932.

September, 1932.

American Otological Society (1)	1 volume.
Dental Board of the United Kingdom (2) ..	1 ,,
Michell Clarke Fund (3)	3 volumes.
Dr. M. Nierenstein (4)	1 volume.
Dr. J. A. Nixon (5)	1 ,,
University of Otago Medical School (6) ..	1 ,,
Dame Mary Monica Wills (7)	2 volumes.

Unbound periodicals have also been received from Professor E. W. Hey Groves.

THE ONE HUNDRED AND FORTY-FIRST LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Alexander, W. .. .. *Plain and Easy Directions for use of Harrowgate Waters* 1773

Australian and New Zealand Pharmaceutical Formulary .. 5th Ed. 1930

Bailey, H., and Love, R. J. M. *Short Practice of Surgery*, Vol. I .. 1932

Certain Necessary Directions . . . Cure of Plague . . . Prevention of Infection 1636

Conybeare, J. J. .. *Textbook of Medicine* .. .. .. 2nd Ed. 1932

Cummings, B. F. .. *The Bed Bug* .. .. 3rd Ed. 1932

Dental Board of the United Kingdom's Four Lectures on Practical Points Connected with Dental Mechanics .. .. (2)

Du Clos .. .. .. *Observations on the Mineral Waters of France* 1684

Heald, C. B. .. .. *Injuries and Sport* 1931

Hoffman, F. .. .. *New Experiments and Observations upon Mineral Waters* .. .. 2nd Ed. 1743

Hunter, A. .. .. *The Waters of Harrogate* .. .. 5th Ed. 1838

Needham, O. M. .. *The Bio-chemistry of Muscle* .. .. (4) 1932

Nouveau Traité de Médecine. Vols. 2, 3 and 18 .. .. .. (3) 1928
Spadacrene Anglica; or the English Spaw .. ..
Walker, J. .. .. .. *Dissertatio Chemica inauguralis de aqua sulphurea Harrowgatensi* 1770
Wells, A. G. .. .. *The Discharging Ear* 1932

TRANSACTIONS, REPORTS, JOURNALS, ETC.

American Otological Society, Transactions. XXI .. .. .. (1) 1931
Bath and Wells Diocesan Directory and Almanack 1921
Burdett's Hospitals and Charities .. .. (7) 1916
Collected Papers of the Mayo Clinic. XXIII (1931).. 1932
College of Physicians of Philadelphia, Transactions. Vol. 53 1931
Henry Phipps Institute, University of Pennsylvania. 23rd Report.. 1931
Researches published from the London Hospital during 1931 .. (5)
Surgical Clinics of North America. June, 1932 .. ..
University of Otago Medical School, Proceedings. No. 9 1932

Local Medical Notes

EXAMINATION RESULTS.

University of Bristol.—M.B., Ch.B. *Final Examination:* H. F. M. Finzel (Second Class Honours).

Conjoint Board.—M.R.C.S., L.R.C.P. *Pass. In Chemistry:* P. W. J. Parkes. *In Elementary Biology:* J. G. Jones. *In Anatomy and Physiology:* Ursula W. Wood. *In Anatomy:* T. H. Taylor. *In Medicine:* D. P. Dewe. *In Midwifery:* H. E. Pearse, F. E. Fletcher.* *In Pathology and Midwifery:* R. L. Marks. *In Midwifery:* Edith K. P. Harris. *In Pathology:* A. J. Board, G. L. Foss, E. O. Walker. *In Surgery:* C. N. Royal, Enid A. Taylour.*

L.D.S. R.C.S.—*Final Examination. Pass. Part I:* O. F. Harley, Margaret D. Hooper. *Part II:* R. E. Morgan.

Society of Apothecaries.—L.S.A. *Pass. In Anatomy:* K. P. Pauli.

Long Fox Memorial Lecture.—The 1932 Lecture will be delivered by Mr. A. J. Wright, F.R.C.S., on Tuesday, 25th October, at 5.30 p.m., in the Physiological Lecture Theatre of the University, the subject being "The Problem of Deafness."

* Qualified.